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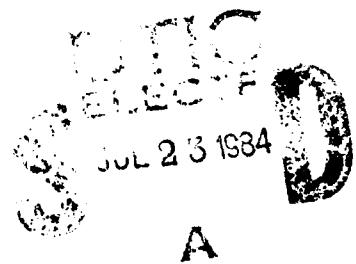
The Military Casualty with
Combat Related Acute Post Traumatic Stress Disorder

Master's Thesis
Submitted to the Faculty
Yale University School of Nursing

In Partial Fulfillment
of the Requirements for the Degree
Master of Science in Nursing

Karen Louise Johnson

May, 1984



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Karen L. Johnson
May 8, 1984

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Abstract

In the next war in which the U.S. military is involved it is predicted that a large number (25% or greater) of military casualties will have combat related Acute Post Traumatic Stress Disorder (APTSD). The purpose of this study was to describe the level of knowledge of United States Air Force (USAF) nurses in regards to combat related APTSD. Factors related to knowledge level were also explored. A researcher designed "Combat Fatigue Questionnaire" was mailed to 600 USAF nurses selected randomly. Three hundred sixty one USAF nurses, representing 8% of the entire population of USAF nurses, responded. Level of knowledge of combat related APTSD as assessed by the "Combat Fatigue Questionnaire" scores is found to be inadequate. The mean score was 61.9 (out of a possible 100) and 251 respondents (69.5%) scored below 70. Only 33% of the respondents had ever received formal education on combat related APTSD. Formal education on combat related APTSD, age and military rank were found to have a positive significant ($p < 0.001$) relationship to level of knowledge scores. Thus, there is a need for increased education about combat related APTSD among USAF nurses.

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CHAPTER I

Description of the Problem

There is growing evidence that the United States is caught up in the "vicious circle of war" (Rakover & Yaniv, 1980, p. 217). The increase in international political tensions with the concomitant increase in U.S. military spending is illustrative of the escalating mutual distrust between nations. Dimsdale points out that "the theme of man struggling to survive, warring to life, is a familiar one" (Dimsdale, 1975, p. 405). Robert Jay Lifton asserts that "the danger of war is greater than ever" (Lifton, 1982, p. 619). Former U.S. Senator Eugene McCarthy (1983) reports that the "window of peril" for U.S. involvement in war will open in 1985. Thus the "age-old tragic drama of humanity resorting to the awful masochistic regression of war" (Huffman, 1970, p. 35) seems destined for a replay in American history. This author, as a United States Air Force (USAF) psychiatric nurse, is concerned for the role she will need to play in that age old drama of war.

"Prevention and contingency response are the very raison d'etre of the military....military psychiatry thus is in a unique position to intervene to prevent manpower losses through psychiatric casualties" (Carlton, 1980, p. 115). In the next war in which the United States is involved, a significant number of psychiatric casualties are expected. It is predicted that as many as 33% of our initial wartime casualties will be victims of combat related Acute Post Traumatic Stress Disorder (APTS) (Jones, D.R., 1981). This prediction may be a conservative one for Fonssier and Darmandieu reported that during the 1973 Yom Kippur War almost 60% of the initial 1500 Israel casualties were psychiatric; these casualties did not have concomitant

physical trauma (cited in Ingraham & Manning, 1980, p. 20). With the appropriate treatment these combat related psychiatric disorders can be returned to duty in several days (Glass, 1954; Ingraham & Manning, 1980; Jones, D.R., 1981). Without appropriate treatment the victims of combat related APTSD will become a permanent loss to military manpower (Glass, 1954). In the short run, this loss in military manpower could lead to the defeat of the U.S. military (Ingraham & Manning, 1980). In the long run, the inappropriate treatment of soldiers with the combat related APTSD could lead to permanent psychiatric disability (Hausmand and Rioch, 1967). Bloch aptly points out that the aim of military psychiatry is to "conserve the fighting strength" (Bloch, 1962, p. 293). This author believes that this is also the aim of the entire USAF medical service.

Given the high predicted incidence of combat related APTSD and the fact that only 4% of the USAF health care personnel are mental health care workers, it is highly likely that health care personnel in disciplines other than mental health will be called upon to care for the military casualty with combat related APTSD. Thus, the need for education on combat related APTSD is indicated for all USAF health care personnel.

There are approximately 4,500 USAF nurses and we are the largest group of USAF health care professionals. USAF nurses are responsible for the education of the USAF's 7,200 medical technicians. The medical technicians make up the largest segment of the total USAF health care team. Therefore, this author concludes that if USAF nurses are well versed in all parameters (i.e. predisposers, symptoms, treatment and prevention) of combat related APTSD, the loss of military

manpower and rates of permanent disabilities secondary to the combat related APTSD will be significantly reduced. This reduction would occur either through the nurses' direct intervention or indirectly through interventions of the medical technicians that they educated. However, this author's personal experience would indicate that USAF nurses have a knowledge deficit in regards to combat related APTSD.

As a member of the military mental health care team, this author should know about combat related APTSD. Yet, in a twelve year military nursing career, this author only attended one course in wartime nursing which spoke to the care of the combat psychiatric casualty. That course in wartime nursing was designed, organized and produced by this author and eight other USAF nurses in November, 1981 and was the first of its kind in the history of the USAF nurse corps. Although, at that time, head nurse of the largest USAF psychiatric unit, this author discovered that her knowledge of wartime psychiatry was miniscule. Unfortunately, the threat of war is not miniscule. Considering my own previous knowledge deficit, this author wonders if her knowledge deficit in regards to the military casualty with combat related APTSD is unusual among USAF nurses.

The United States Air Force (USAF) recruits registered nurses from the civilian community. Upon induction nurses attend a two week military orientation course from which they are then sent to their respective duty assignments. Regardless of the nursing specialty most educational needs of USAF nurses consists of on-the-job training. Unfortunately, on-the-job training does not encompass education on the care of wartime casualties. While most USAF medical facilities have Disaster Preparedness Training programs for their staff on at

least an annual basis, that training mainly addresses triage, logistics, supplies and personnel assignments. Before 1978, no formal education was available to USAF medical personnel on combat casualty care.

In 1978, the USAF Surgeon General recognized the need for educating USAF medical personnel in wartime casualty management and he initiated "Medical Red Flag". "Medical Red Flag is a comprehensive medical readiness training program which uses both classroom presentations and practical field exercises to teach mass casualty management in a wartime environment at the second echelon of care" (Johnson, K.L., 1982, p. 91). Unfortunately, up until 1981, Medical Red Flag exercises were conducted only for physicians, dentists and a small number of nurse practitioners. Since 1981 there has been just one Medical Red Flag for nurses. Other than Medical Red Flag, USAF nurses may be educated on care of the combat psychiatry casualty management through hospital inservice programs. However, hospital inservices generally address current nursing problems. Another formal education avenue is the Battlefield Nursing course that began in June, 1982. As of March 1984, approximately 250 USAF nurses have attended this course (that is about 5% of the total USAF nurse corps). As a result of limited available formal education on combat related APTSD for USAF nurses, this author suspects that a knowledge deficit exists. Therefore, the purpose of this study is to assess the USAF nurses level of knowledge on the disorder, symptoms, treatment and prevention of the military casualty with combat related APTSD.

Review of the Literature

Introduction

The combat related Acute Post Traumatic Stress Disorder (APTSD) is a specific subtype of Post Traumatic Stress Disorder (PTSD). The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM III) (1980) defines this disorder as:

....characteristic symptoms following a psychologically traumatic event that is generally outside the range of usual experience. The characteristic symptoms involve reexperiencing the traumatic event; numbing of responsiveness to or reduced involvement with, the external world; and a variety of autonomic, dysphoric and cognitive symptoms. The stressor producing this syndrome would evoke significant symptoms of distress in most people, and is generally outside the range of such common experiences as simple bereavement, chronic illness, business losses, or marital conflict. The trauma may be experienced alone (rape or assault) or in the company of groups of people (military combat). Stressors producing this disorder include natural disasters (floods, earthquakes), accidental man-made disasters (car accidents with serious physical injury, airplane crashes, large fires), or deliberate man-made disasters (bombing, torture, death camps). Some stressors frequently produce the disorder (e.g., torture) and others produce it only occasionally (e.g., car accidents). Frequently there is a concomitant physical component to the trauma which may even involve direct damage to the central nervous system (e.g., malnutrition, head trauma). The disorder is apparently more severe and longer lasting when the stressor is of human design.

(Diagnostic and Statistical Manual
of Mental Disorders, 3rd ed.,
1980, p. 236)

PTSD has three subtypes: acute, chronic and delayed. The disorder is labeled acute when the symptoms occur within six months of the trauma. If symptoms persist more than six months the chronic label applies. The delay subtype is attached when the onset of symptoms do not occur until six months or more after the trauma.

PTSD is a new diagnostic label as of the printing of DSM III in 1980. In the first edition of the Diagnostic and Statistical Manual of Mental Disorders (1952), the diagnostic label of "Gross Stress Reaction" was the correlate of what is now known as PTSD (Glass, 1954). In the second edition of the Diagnostic and Statistical Manual of Mental Disorders (1968) PTSD did not have a direct correlate and the labels "Anxiety Neurosis" or "Transient Situational Reaction" were most often applied to people presenting with the PTSD symptom complex (Horowitz, Wilner, Kaltreider, & Alvarez, 1980).

It is important to note that the DSM III is an atheoretical manual:

....The approach taken in DSM III is atheoretical with regard to etiology or pathophysiological process except for those disorders for which this is well established and therefore included in the definition of the disorder. Undoubtedly, with time, some of the disorders of unknown etiology will be found to have specific biological etiologies, others to have specific psychological causes, and still others to result mainly from a particular interplay of psychological, social and biological factors.

(Diagnostic and Statistical Manual
of Mental Disorders, 34d ed.,
1980, p. 7)

Combat related APTSD is a disorder that results from an interplay of psychological, environmental, physical and interpersonal factors.

As Lazarus points out "problems of stress must be regarded as interdisciplinary" for they involve the fields of psychology, psychiatry, medicine, physiology, sociology and anthropology (Lazarus, 1966, p. 2).

With that thought in mind, this review of the literature is an interdisciplinary perspective on the incidence, history, predisposers, symptoms, treatment and prevention of combat related APTSD.

Incidence

The incidence of combat related Acute Post Traumatic Stress Disorder (APTSD) is directly related to the number of soldiers killed or wounded in action (Ingraham & Manning, 1980); the intensity of the fighting (Glass, 1954; Bourne, 1970; Jones, D.R., 1981); and the amount of time the soldier is exposed to combat (Glass, 1954; Pettera, Johnson & Zimmer, 1969; Bourne, 1970). Military history reveals that the incidence of combat related APTSD among U.S. soldiers involved in the wars of this century have ranged from 6% to 54% (Blass, 1954; Archibald, et al., 1962; Artiss, 1963; Bourne, 1967; Bloch, 1969; Pettera, Johnson & Zimmer, 1969; Renner, 1973; Ingraham and Manning, 1980; Steyn, 1980). Given the wide range in reported incidences of combat related APTSD, predicting the probable incidence of this disorder appears to be problematic. However, disaster research and theory have provided some useful information for war contingency planners.

"War could be considered a large scale manmade disaster" (Hartmann & Allison, 1981, p. 323). When one examines war as a man-made disaster, the work of Tyhurst provides a conceptual framework upon which most disaster literature is built. Tyhurst found in his study of how individuals respond to disaster that there were three overlapping phases: "(a) a period of impact; (b) a period of recoil; and (c) a post-traumatic period" (Tyhurst, 1957, p. 150). During the phase of impact, Tyhurst observed that about 12% to 25% were calm, about 75% were stunned and another 12% to 25% displayed symptoms of severe anxiety. Within the phase of recoil most people get in touch with their emotions and many manifest a childlike

dependency. In this phase, without appropriate interventions, there will be more psychological morbidity which manifests itself in the post-traumatic phase with the symptom complex that we now label as PTSD (Tyhurst, 1957).

Military psychiatrists predict that the incidence of combat related APTSD will be high in the next war in which the U.S. military is involved (Ingraham & Manning, 1980; Jones, D.R., 1981). Colonel D.R. Jones estimates that one in every three wounded will suffer from combat related APTSD (Jones, D.R., 1981). Several factors lend credence to that prediction: the maiming and killing capacity of today's weapons; the projected logistical difficulties of removing casualties from the field of battle; the existence of outdated medical plans for the contingency of modern warfare; and the lack of primary prevention efforts in the military (Ingraham and Manning, 1980).

Historical Perspective

The existence of the combat related Post Traumatic Stress Disorder (PTSD) has been acknowledged for thousands of years. Moses commanded his troops who are about to besiege a city:

And the officers shall speak further unto the people,
and they shall say, What man is there, that is
fearful and fainthearted? Let him go and return
unto his house lest his brethren's heart faint as
his heart.

(The Holy Bible, King James Version,
Deuteronomy 20:8)

Moses was obviously aware of the detrimental impact that soldiers with combat related stress had on warring behaviors. God was also aware, for He told Gideon "Whosoever is fearful and afraid let him return and depart early from Mount Gilead" (Judges 7:15). Notably 12,000 of

Gideon's 22,000 troops departed. Nevertheless, Gideon did win the battle with the 10,000 remaining stouthearted men. Both of these biblical accounts lend credence to an assertion made many centuries later by Dr. Sandor Rado at the 98th annual meeting of the American Psychiatric Association. Dr. Rado described the soldier with combat related APTSD (then known as "traumatic war neurosis") as "...a serious form of military casualty, the victim's appearance alone often being such as to threaten the morale of the troops" (Rado, 1942, p. 362).

The first report of American combat related stress disorders occurred considerably later than Old Testament times. During the Civil War, the Surgeon General of the Union Army made note of a disorder which he labeled "nostalgia". He described this disorder as melancholy secondary to disappointment and homesickness. His treatment recommendations were to keep the mind and body of the nostalgic soldier busy. In addition, if hospitalization was indicated, then the soldier should be hospitalized near the troops. The Union Army statistics revealed that over 5,200 soldiers suffered from nostalgia in the first year of the Civil War. It was around this time that the Government Hospital for the Insane (now known as St. Elizabeth's Hospital) in Washington, D.C. began admitting military psychiatric casualties (Steyn, 1980).

By the turn of the century psychiatry was establishing itself as a medical specialty. Sophisticated military medical leaders began jumping on the bandwagon to lobby for the implementation of psychiatric screening procedures of military recruits. In 1910, the U.S. Navy Assistant Surgeon Heber Butts wrote that he saw psychiatric screening as an excellent way to weed out the "...dummies, imbeciles,

and actually and potentially insane men" (Butts as quoted in Steyn, 1980, p. 409). Butts went on to state "Greater caution should be exercised in enlisting men of Irish birth because Ireland furnishes the United States far more psychopathic individuals than any other country!" (Butts quoted in Steyn, 1980, p. 409). He urged that every recruit be screened for the "stigmata of degeneration" (Steyn, 1980, p. 409). These "stigmata of degeneration" included very discriminating indicators such as: color blindness; left handedness; missing wisdom teeth and asymmetrical facies. Another Navy medical leader in 1913 wrote that special attention also needed to be paid to depressions and scars of the scalp. In 1916, Assistant Surgeon Sheehan of the U.S. Navy again added to the psychiatric screening procedures. The military medical officer was then entreated to attend to deviated septums, small heads and unfortunate family and developmental histories (Steyn, 1980). While many of these signs of unsuitability for military service are no longer considered relevant, it is important to note that to this day psychological screening of military inductees is still accomplished. This author wonders how many of the current psychological screening procedures will be considered ludicrous in the future.

In the early 1900's, the impact that the discipline of psychiatry had on the military was a bit more positive in the U.S. Army than in the U.S. Navy. For the first time in American military history and just prior to U.S. entry into World War I, contingency plans for the care of combat psychiatric casualties were made. The impetus for these plans came from reports of the high psychiatric casualty rates of British and French soldiers who were engaged in battle early in World War I. Thus, Dr. Thomas Salmon, a psychiatrist, was recruited

into the Army to direct the psychiatric services of the U.S. troops in France. Prior to U.S. military involvement in World War I, Dr. Salmon visited Great Britain and France to study the treatment and disposition of their combat psychiatric casualties. He found that the French and the British had distinctly different approaches (Hausman & Rioch, 1967).

The British military evacuated their psychiatric casualties back to hospitals in Great Britain where conventional civilian psychiatric treatment was given. Few of the British psychiatric casualties were ever returned to duty (Hausman & Rioch, 1967). Dr. Albert Glass noted of this era, "when mental casualties were evacuated to rear hospitals, resistance to improvement was the rule; symptoms became fixed and chronic disability resulted" (Glass, 1954, p. 745).

On the other hand, the French military had two methods of treating their psychiatric casualties that were quite different from the British. Both of these methods were more effective in increasing the soldier's return to duty rate. However, one of the methods was a bit more humane than the other. The first method involved giving the psychiatric casualties painful electrical stimulation of the muscles along with threats of solitary confinement. This treatment approach was clearly the offshoot of the French military's concern that soldiers would act crazy just to be removed from battle. Later in the war, the French military instituted the second method of treatment of their psychiatric casualties. This method involved a less aversive retraining program conducted by a wounded non-medical officer not far from the battle front. Thus, the secondary gain issue of being removed from battle was again addressed as the battlefield was nearby. Emphasis was placed on the men returning to duty. Salmon was impressed

with the second method for the return to duty rate was high (Hausman & Rioch, 1967).

When the U.S. military entered World War I, Major Salmon's plan of action developed from his observations of the French was initiated. Three field treatment units were set up near the front to handle "shell shocked" soldiers. Once the soldier arrived to the field treatment unit he was made aware of the expectation that he would return to duty. An important part of Salmon's strategy involved the early detection of soldiers suffering from shell shock. The plan of action thus employed are now the "classical principles of immediacy, proximity, and expectancy" (Steyn, 1980, p. 410). Salmon's plan proved to be highly effective in that at least 65% of the American psychiatric casualties were returned to duty with only a four percent recidivism rate (Hausman & Rioch, 1967). This return to duty rate is even more remarkable when you consider that the average stay of a soldier at a field treatment unit was just seven days (Sohlberg, 1976).

Although effective treatment of the "shell shocked" was instituted in World War I, at that time, there was not a clear formulation of the cause of this disorder. Originally it was thought that "shell shock" was due to changes in the molecules of the nervous system (Rado, 1942). This theory was given support by the reports of soldiers being close to exploding shells and experiencing concussions secondary to the explosive shock. However, this theory was abandoned when it was noted that prisoners of war exposed to the same shelling conditions were not displaying symptoms of "shell shock" (Glass, 1954). Concomitant and following the exploding shells of World War I (the war to end all wars) there was a literal explosion

in the field of psychiatry. "By 1924, some 4,000 articles dealing with combat neurosis had been published" (Steyn, 1980, p. 410).

Between World War I and World War II, theorists such as Freud and Kardiner gave impetus to a switch from the organic to the psychogenic formulation of combat related PTSD. Freud made a point of distinguishing "traumatic neurosis" from "war neurosis" by pointing out that in war neurosis the conflict is between the ego and the hostile forces of the external world. Kardiner, spurred on by Freud's work, did a study of veterans with "traumatic neurosis" and concluded that the trauma was really a damaged sense of mastery that results in the altered perception of the world as a hostile place. Rado pointed out that the dichotomy in classifying "traumatic war neurosis" as either physical or psychic is not necessary. He conceptualized the disorder as the flooding by stimuli of the soldier's "emergency control" system with the resultant involuntary inability to shut down the "fight or flight" response. Thus the soldier remains in overdrive and this manifests itself with physical and psychic symptoms (Rado, 1942). Although much attention was given to the etiology of "war neurosis" between the world wars, less attention was given to treatment applications for future wars.

In World War II, the lessons learned in World War I were forgotten:

At the onset of World War II American medical service was curiously unprepared to carry out a program of forward psychiatry, despite the well-documented psychiatric experiences of World War I. Psychiatrists had been deleted from assignment with combat divisions and there were no provisions made for special psychiatric treatment units at the field army level or in the communication zone. Military strategists did not plan for psychiatric casualty management.

(Glass, 1954, p. 726)

As a result, combat related APTSD (then called "war neurosis" or "psychoneurosis") became the disorder that accounted for the greatest loss of military manpower during that war (Bloch, 1969). In fact, at one point during the early part of World War II, neuropsychiatric casualties equalled the number of military inductees in the U.S. Army (Hausman & Rioch, 1967). Kalinowsky pointed out that in World War II:

...discharges for neuropsychiatric reasons numbered 49% of all separations from service including those discharged for administrative reasons because of personality difficulties. These figures are all the more striking as even at the induction stage the percentage of rejections on neuropsychiatric grounds was 38.2% of all rejections.

(Kalinowsky, 1950, p. 340)

What happened in the early part of World War II that the principles of immediacy, expectancy and proximity were not applied? Perhaps the answer was best articulated by Dr. Kalinowsky who stated, "War neurosis seems to attract the interest of psychiatrists only in times of war" (Kalinowsky, 1950, p. 340). Fortunately, about two years after the U.S. entered World War II provisions for psychiatric field support were made. Psychiatrists were sent to Algiers and North Africa. A mere month after the arrival of psychiatric support in North Africa, 70% of the psychiatric casualties of that area were returning to duty:

In the spring of 1943 Hanson and Tureen, working at a forward evacuation hospital with fresh psychiatric casualties, were able to restore 70% of their received patients to combat duty by a 4 day period of rest, food, and encouragement and thus established the value of the treatment methods developed in World War I.

(Glass, 1954, p. 727)

Thus, the same principles employed in World War I by Salmon came into being again in World War II and were used with great success. An additional factor in the reduction of psychiatry casualty rates was the change of the label "war neurosis" or "psychoneurosis" to the more benign label of "combat exhaustion". It had been noted that the diagnostic label "war neurosis" had an iatrogenic effect in that it connotated for many an irreversible serious psychiatric illness (Hausman & Rioch, 1967). With the new label of "combat exhaustion" the soldiers were more able to believe that they were experiencing a normal reaction and with rest would soon be returning to duty.

During World War II, there were two psychiatrists, Lieutenant Colonel Roy R. Grinker and Major John P. Spiegel, assigned as consultants to the 12th Air Force who gave creditability to the assertion that combat exhaustion was a normal reaction. While assigned to the 12th Air Force, they studied several thousands of combat soldiers who were predominately U.S. Army fliers. As a result of their work, they wrote a book which has become a classic entitled "Men Under Stress". They began this book by stating, "Under sufficient stress any individual may show failure of adaptation, evidenced by neurotic symptoms" (Grinker & Spiegel, 1945, p. vii). Thus, the concept that "all men have their breaking point" was strengthened. As a result of their book the word "stress" became popularized in the U.S. (Lazarus, 1966). Grinker and Spiegel's book also became a useful reference in the Korean conflict.

During the Korean conflict, lessons relearned in World War II were not forgotten. The label "combat exhaustion" remained in effect and was used interchangeably with the label "combat fatigue"

(Glass, 1969). Under the leadership of Colonel Albert Glass, the psychiatric support services were responsible for returning to duty 65% to 75% of the soldiers with combat related APTSD. Recidivism was just at 10%. Glass had been an Army psychiatrist in World War II and that is thought to be a major factor in the continued application of Salmon's principles during the Korean conflict (Hausman & Rioch, 1967). So, the experience of psychiatry in Korea validated the experiences of the two previous wars in which the U.S. had been involved. On the other hand, the Vietnam Era brought some striking contrasts to the military psychiatry histories of the last three wars.

In the beginning, reports indicated that the psychiatric casualty rates in the Vietnam Era were significantly lower than in any other war for which the U.S. had maintained statistics. Department of Defense statistics showed that: in World War II the psychiatric casualty rate was 28 to 101 per 1,000 soldiers; in Korea the rate was 37 per 1,000; and in Vietnam the rate was (a mere) 12 per 1,000 soldiers (cited in Jones, F.D., 1967, p. 1004). In addition, there was a similar decrease in the number of medical evacuations for psychiatric reasons. In World War II, 23% of all medical evacuations were psychiatric; in Korea, 6% were psychiatric; and in Vietnam only 2-3% were psychiatric (Renner, 1973). Even more surprising than the decreased rates in psychiatric casualties, was the decrease in the number of psychiatric casualties with "combat fatigue".

"Cases of combat fatigue accounted for less than 6% of all psychiatric hospitalization in Vietnam, and virtually all these men were returned to duty" (Renner, 1973, p. 169). With this marked reduction in the number of casualties with combat fatigue many began asking the question, "Why?". The answers were quick in coming and

often took the form of a pat on the back to military psychiatry or a minimization of the particular stresses of the Vietnam Era. For instance, F.D. Jones speculated that the lower incidence of combat fatigue was due in part to the 12 month rotation policy and the probable over diagnosing of combat fatigue in the previous wars (Jones, F.D., 1967). Steiner and Neumann (1974) postulated that the lower rate was a result of the smaller proportion of troops actually engaged in combat. Renner (1973) indicated that the reduced exposure to prolonged time in combat coupled with the "Rest and Recuperation" program were important factors in the combat fatigue rate reduction. Bourne (1970) pointed out that at the outset of the Vietnam Era there was an expectation that the psychiatric casualty rate would be high. However, when this expectation was not born out Bourne concluded:

The reasons for the low level of psychiatric attrition are multiple, although most ameliorating influences can be attributed directly or indirectly to the significant increase in psychological awareness of the military command. A new level of sophistication exists in this area among military planners that was not present even during the Korean conflict but which has made itself felt in Vietnam.

(Bourne, 1970, p. 483)

In addition, Bourne felt that the Vietnam war "does not subject the individual to the same magnitude of stress that was seen in World War II and Korea" (Bourne & San, 1967, p. 909). Bourne and many others didn't realize that the psychiatric casualty rates of the Vietnam Era were only a tip of an iceberg that was gradually emerging.

Just two years after Captain Bourne wrote the above explanation of the low psychiatric attrition in Vietnam he had a change in perspective:

That the incidence of emotional problems, even the level of hospitalization, is so high among today's veterans, makes depressingly hollow the claim that we have cut combat psychiatric attrition to a minimum. To merely delay the time at which the peak incidence of psychiatric breakdown occurs is not a notable accomplishment.

(Bourne, 1972, p. 26)

Bourne and other "blind" began to gather some insights. Previously, it had noted along with the decrease in psychiatric casualties that there was a shift in the type of disorders that were diagnosed in the Vietnam Era: Strange and Brown (1970) noted that there was a higher incidence of alcohol abuse; Bourne (1970) observed a large increase in the percentage diagnosed with character and behavior disorders; Braatz, Lumry, and Wright (1971) noted a much higher incidence of drug abuse, suicidal or assaultive tendencies and suicidal acts. While this was not classified as a psychiatric disorder, Bond (1976), wrote about the tremendous increase in violent behavior as manifested by "fragging" (the blowing up of a superior officer). Along the same line of thought, Gault reported that many of the Vietnam veterans he interviewed were involved in the "slaughter" of defenseless people (Gault, 1971, p. 451). Lifton (1972) also noted the increase in slaughter behavior as reported by the Vietnam veterans as well as greater alienation. However, none were prepared for the delayed psychiatric problems that began to manifest itself in the early 1970s and continues to this day.

Keane and Fairbank conducted a survey of approximately 1100 Veterans Administration mental health professionals and found that

"Vietnam veterans were less well adjusted than veterans of previous wars." (Keane & Fairbank, 1983, p. 348). Frye and Stockton (1982) report that current research shows a significant portion of the 2.6 million Vietnam veterans are now experiencing stress disorders. In their study of 88 Vietnam veterans who were graduates of the same Officer Candidate School class, they found that "38 (43%) of the subjects in this study were experiencing moderate to strong symptoms of the disorder" (Frye & Stockton, 1982, p. 55). Langley cites J.P. Wilson's estimate that "as many as 750,000 to 800,000 Vietnam veterans are currently displaying moderate to severe adjustment problems attributed to their Vietnam military experiences" (Langley, 1982, p. 593). Langley goes on to say that these problems are manifested in the "delayed or chronic post-traumatic stress disorder (PTSD)" (Langley, 1982, p. 593). Williams notes that many Vietnam veterans "continue to experience psychological distress nearly a decade after the war" (Williams, 1983, p. 14). Williams postulates that the continued distress is a result of the veteran's search for meaning. A search thwarted by American society's inability to give the Vietnam Era an honorable meaning.

At present, the U.S. military is involved in a limited fashion in El Salvador and in Lebanon. While we do have information on the number of U.S. soldiers killed or wounded in these countries, no specific information on the incidence of APTSD is currently available.

Predisposers

"Phenomenological description of stress response syndromes has been difficult because psychological reactions always combine response keyed to a recent serious life event with previous inner models of the self and the world" (Horowitz, Wilner, Kaltreider, & Alvarez, 1980, p. 85). Lazarus (1966) points out that a variety of disciplines have contributed to stress theory development. Depending upon the discipline, the focus on the predisposing factors in stress disorders has been varied. As this author reviewed the literature on the predisposers of stress disorders in general and specifically combat related PTSD, she found that there are four main categories of predisposers. These predisposers are: the intrapsychic; the interpersonal or social; the environmental; and the physical. Usually it is a combination of factors in two or more of these categories that seem to be operating in the soldier with combat related PTSD (Levav, Greenfield, & Baruch, 1970).

Among the most prominently discussed intrapsychic predisposers are: the fear of death and/or mutilation (Dollard, 1943; Peterson & Chambers, 1952; Glass, 1954; Lifton, 1973; Becker, 1977; Parker, 1977; Ingraham & Manning, 1980; Jones, D.R., 1981; Van Devanter, 1983); unresolved grief (Lindemann, 1944; Archibald, Long, Miller, & Tuddenham, 1972; Moaz, 1976; Horowitz, Wilner, Marmar & Krupnick, 1980); Krupnick & Horowitz, 1981); survivor guilt (Lifton, 1973; Erickson, 1976; Wilmer, 1982); the meaning attached to the combat experience (Lifton, 1973; Hendin, 1981; Horowitz, 1976; Williams, 1983); and personality disorders (Bourne, 1970; Morris, 1970; Sohlberg, 1976; Horowitz, 1976).

The threat of death and/or mutilation is the harsh reality in combat and fear is the natural sequel to that reality. Dollard (1943), in his study of 300 American veterans of the Spanish Civil War, found 74% admitted to being fearful when going into battle for the first time and only 9% claimed that they were never fearful during battle. In their study of 30 patients with PTSD, Krupnick and Horowitz found a predominant theme to be "discomfort over personal vulnerability" (Krupnick & Horowitz, 1981, p. 428). Lifton (1973) in his work with Vietnam veterans found they saw their experience as one of beating the clock against the grim reaper. Quoting a poem by Larry Rottman, Lifton illustrates this point:

Before it hit me
That I was to be here
a whole year
365 days
8,760 hours
525,600 minutes
31,536,000 seconds
in which to die

(Rottman, quoted in Lifton, 1973, p. 333)

In a study of the survivors of the Buffalo Creek disaster, Lifton (1976) found that the fear of death generated by that tragedy lead to a death imprint and death anxiety. Death anxiety may increase as a result of identification with the similar deceased (Krupnick & Horowitz, 1981). Former U.S. Army nurse and Vietnam veteran, Lynda Van Devanter, wrote of her death imprint left by her year's experience as an operating room nurse in that war zone:

As I looked around the club, all I could see was Gene, the young bleeder we had lost a few nights earlier. Gene and Katie, May 1968. Then, when his face was gone, I began seeing all of them -- the double and triple amputees, boys with brain injuries, belly wounds, and missing genitals. I could see the morgue and hundreds of bodies strewn haphazardly; the faces of

eighteen year old kids wracked with pain as they lay dying. There were seventeen year old kids who probably hadn't had a chance to make love yet who had lost their penises. There were others who were not old enough to shave who had their faces burned off. There were married fathers who were blinded and would never see their children. Or who were paralyzed and would never be able to throw a ball, run along a trail, or even lift a pencil. They were all with me in that room..... I lost control and became hysterical.

(Van Devanter, 1983, p. 173).

Fear of death in the soldier can be triggered by unresolved grief over a significant other (Moaz, 1976). In support of the findings of Moaz, Archibald, et al. (1962) in their study of 53 soldiers with combat related PTSD found that a significant number of these soldiers had lost a parent before the age of 14. Lindemann (1944), in his classic work on grief explained that unresolved grief can result from conflicted feelings about the deceased when the deceased is a person who invited much hostility. Lifton (1972), noted that some of the Vietnam veterans had conflicted feelings about the soldiers that they killed. Lifton illustrated this conflict by quoting a veteran who talked of his feeling about killing a Viet Cong soldier with a knife: "I felt sorry. I don't know why I felt sorry. John Wayne never felt sorry" (Lifton, 1973, p. 97).

Beyond grief there is guilt: the guilt of surviving when others have not; the guilt of surviving because others have died in your place; the guilt of surviving when you are guilty of taking another life. This type of guilt is in this Vietnam veteran's rephrasing of the 23rd Psalm:

Yeah as I walk through the valley of death
I shall fear no evil
For the valleys are gone
And only death awaits
AND I AM THE EVIL

(an anonymous Vietnam veteran quoted
in Lifton, 1973)

Wilmer (1982) in his study of the dreams of Vietnam psychiatric casualties found that survivor guilt was a potent predisposer to the development of psychiatric symptoms. In their case study report of psychotherapy with four Vietnam psychiatric casualties Hendin, et al. found that "the development of stress reaction is integrally related to an individual's specific perception of a traumatic experience" (Hendin, Pollinger, Singer & Ulman, 1981, p. 1492). Kai Erickson (1976), in his study of the survivors of Buffalo Creek found survivor guilt was a theme even years later:

I worry about such things as: Was it my big triple-glass mirror that cut off one of my dear friend's head? This worries me to death. These may seem like silly things to you, but you just try sleeping with such thoughts on your mind.

(an anonymous Buffalo Creek survivor
quoted in Erikson, 1976, p. 171)

Traditionally, a soldier's conduct is based on the unquestioning obedience and loyalty to his superiors:

"Forward, the light Brigade!"
Was there a man dismayed:
Not tho the soldiers knew
Someone had blundered:
Theirs not to make reply,
Theirs not to reason why,
Theirs but to do and die:
Into the valley of Death
Rode the six hundred.

(Tennyson [1855], "Charge of the
Light Brigade" quoted in Lifton,
1973, p. 217)

Lifton (1973) described the "counterfeit universe" that Vietnam veterans perceive as a result of their combat experience. This perception leaves the veteran with the sense that life is a lie and as such is devoid of meaning. Hendin, Pollinger, Singer, and Ulman in their case study report of psychotherapy with four Vietnam

Psychiatric casualties found that "the development of stress reaction is integrally related to an individual's specific perception of a traumatic experience" (Hendrin, et al., 1981, p. 1492). Williams (1983) reviewed the literature on PTSD and conclude that high incidence of PTSD among Vietnam veterans is a direct result of their individual searches for meaning of their combat experience. As a result of the work of Freud, many in the field of psychiatry began to postulate that men who broke under the stress of battle did so because they already had a weakened ego structure (Glass, 1969). Since the mid 1920s a controversy has existed over the preexistence of neurotic disorders in soldiers who develop combat related PTSD. Bourne (1970) reports that one study done on combat pilots with combat related PTSD found no evidence of preexisting neurosis in those men; while another study reports that men with preexisting neuroses have seven to eight times the probability of developing psychiatric symptoms. Sohlberg addresses this controversy and concludes "we may assume that symptoms of combat fatigue result from a complex interaction between certain specific personality variables and certain characteristics of the combat situation" (Sohlberg, 1976, p. 527).

The interpersonal or social factors that predispose soldiers to combat related PTSD are: lack of social support (Glass, 1969; Erickson, 1976; Dasberg, 1976; Steiner & Newman, 1978; Chamberlain, 1980; Billings & Moos, 1981; Bromet, 1982; Melick, Logue & Frederick, 1982; White, 1983); negative societal response (Lifton, 1963; Bourne, 1972; Lifton, 1973; Jones, D.R., 1980; Hendin, et al., 1981; Van Devanter, 1983); poor social adaptation (Lang & Lang, 1964; Bey & Smith, 1970; Huffman, 1970; White, 1983); low morale (Westmoreland, 1963; Lang & Lang, 1964; Glass, 1969; Lifton, 1973; Ingraham &

Manning, 1980; Jones, D.R., 1981; Bourne, 1981; Langley, 1982); and inadequate training (Lifton, 1973; Ingraham & Manning, 1980).

Of the references cited in the above paragraph several bear elaboration. Steiner, and Neuman conducted a study of 74 Israeli soldiers suffering from PTSD after the Yom Kippur War. They compared these soldiers with a control group of 100 soldiers who did not have PTSD and concluded that the lack of social support was a critical factor in the higher incidence of combat related PTSD. Huffman (1970), a former U.S. Army psychiatrist, conducted a record review of 610 psychiatric patients in Vietnam and concluded that a history of poor social adjustment prior to military experience in a combat zone predisposes the soldier to emotional difficulties. Van Devanter (1983) in her autobiographical account of her return to the United States from her service in Vietnam made these poignant remarks:

But somewhere between 1945 and 1970, words like bravery, sacrifice, and valor had gone out of vogue. When I returned to my country in June of 1970, I began to learn a very bitter lesson. The values with which I had been raised had changed; in the eyes of most Americans, the military services had no more heroes, merely baby killers, misfits and fools. I was certain that I was neither a baby killer nor a misfit. Maybe I was a fool.

(Van Devanter, 1983, p. 209)

Then Lieutenant Van Devanter was painfully aware of society's response to the Vietnam Era. Unfortunately, that awareness was graphically brought home to her on her first day back in "her country". On that day, she stood in uniform on the highway trying to hitch a ride to the airport for over four hours. During those four hours: she had obscenities yelled at her; was spat on; and received a memorable greeting of "Welcome home asshole" (Van Devanter, 1983, p. 211).

"Bringing into the awareness of practicing psychiatrists the immense importance of immediate environmental stress as precipitants to psychiatric symptoms" (Bourne, 1981, p. 481) was one of the most important contributions made by military psychiatry. In fact the shift of focus from intrapsychic dynamics to socioenvironmental dynamics in psychiatry is seen largely as the result of the impetus provided by military psychiatry (Hausman & Rioch, 1967). Through their experience in World War I and World War II military psychiatry had gathered irrefutable proof that "combat itself creates terrific stress" (Peterson & Chambers, 1952, p. 250). After World War II there was a burgeoning of research on the human response to extreme stress. Much of the research conducted related to the psychological response to natural and man-made disasters. This research has, in general, supported the findings of military psychiatry in regards to PTSD and provided useful elaboration in particular on the environmental predisposers. The most commonly cited environmental predisposers are: seeing others mutilated and/or killed (Glass, 1954; Erikson, 1976; Lifton & Olson, 1976; Rangell, 1976; Sohlberg, 1976, Hogben & Cornfield, 1981; Jones, D.R., 1981; Van Devanter, 1983; Wilkinson, 1983); intensity and duration of the threat (Glass, 1954; Askevold, 1976; Steyn, 1980; Ingraham & Manning, 1980; Bourne, 1981; Jones, D.R., 1981, Penk, et al., 1981; Frye & Stockton, 1982); the amount of environmental destruction (Erickson, 1976; Lifton & Olson, 1976; Rangell, 1976; Parker, 1977; Patrick & Patrick, 1981); and lack of a safe haven (Erikson, 1976; Patrick & Patrick, 1977; Jones, D.R., 1981; Visintainer, 1982).

In a study conducted on 102 persons involved as either victims, rescuers or observers in the collapse of the Hyatt Regency Hotel skywalks, Wilkinson found that "virtually all of the subjects had psychiatric symptoms" (Wilkinson, 1983, p. 1134). Wilkerson (1983) concluded that their symptoms are a result of the witness of the disaster. Patrick & Patrick (1981) conducted a study of 191 Sri Lanka residents after a large part of that island was devastated during a 1978 cyclone. They found that the incidence of psychological dysfunction was 77% in a village that sustained considerable damage. On the other hand, the incidence of psychological dysfunction was only 4% in the control village (Patrick & Patrick, 1981).

Perhaps the most studied man-made disaster of the last decade is Buffalo Creek. On February 26, 1972, 132 million gallons of water and slate sludge broke loose from a mining company dam and crashed into the West Virginia valley known as Buffalo Creek (Erikson, 1976). Within two hours 4,000 were homeless and 125 were dead. Of 615 survivors examined by a psychiatrist 570 (93%) were found to be psychically impaired--one and a half years after the tragedy (Erikson, 1976). Rangell (1976) explains this high incidence of psychic impairment as resulting from the loss of "ground and surround"; that is, the total devastation of the actual ground and vegetation as well as the destruction of the community. Perhaps even more startling than the incidence of psychological impairment was the setting of a new legal precedent. Stern (1976) reports that of the 625 survivors that sued the mining company were awarded a total of 13.5 million dollars on the basis of "psychic impairment". Erikson (1976) points out that Buffalo Creek (like many combat units) was a small close knit community thus the death and mutilation witnessed was that of significant others:

I can see the water from the dam destroying my house, clothing, furniture, cars. We lost everything we had saved all our lives in a very few minutes. I can see my friends drowning in the water asking for help. I will never be the same person again.

(anonymous Buffalo Creek survivor
quoted in Erikson, 1976, p. 157).

My son was crushed up so bad, I went about four times to identify him. His head was just smashed to jelly. He had just a little bit of sideburn left, where you could tell it was him...

(anonymous Buffalo Creek survivor
quoted in Erikson, 1976, p. 168).

In addition to the intrapsychic, interpersonal, and environmental predisposers there are physical predisposers. These are: inadequate rest (Glass, 1969; Ingraham & Manning, 1980; Jones, D.R., 1981; Bourne, 1981; White, 1983); physical illness or injury (Grinker, 1945; Glass, 1969; Bourne, 1981; Renner, 1973; Jones, D.R., 1981); and inadequate nutrition (Jones, D.R., 1981). Glass (1969) in his review of the history of military psychiatry noted: "Exhaustion was selected because it best described the appearance of most psychiatric casualties" (p. xvii).

Ernie Pyle, a World War II correspondent, wrote:

For four nights and days, they have fought hard, eaten little, washed none and slept hardly at all. Their nights have been violent with attack, fright, butchery and their sleepless and miserable with the crash of artillery.

(Ernie Pyle, quoted in Glass, 1969,
p. xvii).

Such is the life of a soldier in war. Colonel D.R. Jones indicates that sleep deprivation is perhaps the most common physical predisposer; however, "the military's attitude towards sleep seems to be that of monks toward sex: if you are really competent, you can get along without it" (1981), p. 7).

Symptoms

The Diagnostic and Statistical Manual of Mental Disorders (3rd ed., 1980) describes the symptom complex of Post Traumatic Stress Disorder (PTSD):

Commonly the individual has recurrent painful, intrusive recollections of the event or recurrent dreams or nightmares during which the event is reexperienced. In rare instances there are dissociativelike states, lasting from a few minutes to several hours or even days, during which components of the event are relived and the individual behaves as though experiencing the event at the moment. Such states have been reported in combat veterans. Diminished responsiveness to the external world, referred to as "psychic numbing" or "emotional anesthesia", usually begins soon after the traumatic event. A person may complain of feeling detached or estranged from other people, that he or she has lost the ability to become interested in previously enjoyed significant activities, or that the ability to feel emotions of any type, especially those associated with intimacy, tenderness, and sexuality, is markedly decreased.

After experiencing the stressor, many develop symptoms of excessive autonomic arousal, such as hyperalertness, exaggerated startle response, and difficulty falling asleep. Recurrent nightmares during which the traumatic event is relived and which are sometimes accompanied by middle or terminal sleep disturbance may be present. Some complain of impaired memory or difficulty in concentrating or completing tasks. In the case of life-threatening trauma shared with others, survivors often describe painful guilt feelings about surviving when many did not, or about the things they had to do in order to survive. Activities or situations that may arouse recollections of the traumatic event are often avoided. Symptoms characteristic of post-traumatic stress are often intensified when the individual is exposed to situations or activities that resemble or symbolize the original trauma (e.g., cold snowy weather or uniformed guards for death-camp survivors, hot humid weather for veterans of the South Pacific).

Symptoms of depression and anxiety are common, and in some instances may be sufficiently severe to be diagnosed as an Anxiety or Depressive Disorder. Increased irritability may be associated with sporadic and unpredictable explosions of aggressive behavior, upon even minimal or no provocation. The latter symptom has been reported to be particularly characteristic of war veterans with this disorder.

Impulsive behavior can occur, such as sudden trips, unexplained absences, or changes in life-style or residence. Survivors of death camps sometimes have symptoms of an Organic Mental Disorder, such as failing memory, difficulty in concentrating, emotional lability, autonomic lability, headache, and vertigo.

(The Diagnostic and Statistical Manual of Mental Disorders, 3rd ed., 1980, p. 236-237)

Thus, the symptoms of PTSD are: cognitive (e.g., intrusive recollections, recurrent nightmares, impaired memory, difficulty concentrating or completing tasks); behavioral (e.g., explosive, impulsive or avoidant behavior); emotive (e.g., psychic numbing, guilt feelings, irritability, anxiety, depression); and physical (e.g., hyperalertness, exaggerated startle response, difficulty falling asleep).

Emotive symptoms have been studied by a number of researchers. Braverman (1980) studied 110 accident victims who developed PTSD and found that the earliest symptom of the disorder is irritability. Irritability is thought to result from the sensory deprivation as a result of the traumatic event (Kentsmith, 1980). Lavie, Hafez, Halperin and Enoch (1969) noted that there is almost unanimous agreement that irritability is one of the earliest symptoms of psychological unbalance. Irritability was ranked as the second most frequent symptom in soldiers with operational fatigue. In their study of Buffalo Creek survivors, Titchener and Kapp (1976) noted "for many, unresolved grief turned into depressive symptoms, ideation and behavior" (p. 297). Grinker (1945) in his book "Men Under Stress" observed:

If the poignant dilemma of the individual who is faced with the choice of saving his own life, perhaps to fight again later, or of risking it for his friends, is solved in favor of the former, and especially if the decision is made out of his own anxiety, the result is often severe depression.

(Grinker, 1945, p. 114)

Buffalo Creek survivors were also studied by Lifton and Olson (1976); they discovered that many had "psychic numbing" and postulated that this was a result of denial as a defense against persistent grief. Jones, (1981) notes that fear is one of the predominant symptoms of a soldier with combat stress. The emotion of guilt is seen as an indicator of the soldier's conflict between moral standards and the drive for survival, revenge and aggression (Renner, 1973).

The physical symptoms of stress were first studied by Selye in 1936. Selye (1936) noted that the physical symptoms of stress result from autonomic arousal. The DSM III does not go into great detail about the physical symptoms. Colonel D.R. Jones (1981) notes that physical symptoms include: urinary frequency, anorexia, nausea, vomiting, diarrhea, abdominal cramps, tremors, increased pulse, increased blood pressure, palpitations, hyperventilation, altered sensation, hysterical paralysis, blindness or muteness and fatigue. Lavie, et al. (1979) conducted sleep studies on 11 Yom Kippur War veterans with PTSD. When compared against controls most of these subjects had shorter sleep time and lower sleep efficiency. Since the subjects were studied two to two and a half years after the war, Lavie, et al. concluded that PTSD had long term effects on sleep patterns. Archibald, et al. (1962) cited a study conducted by Dobbs and Wilson on combat veterans which demonstrated the marked exaggerated startle response to combat noises that the veterans had in contrast to the controls.

One of the first to note the behavioral symptoms of stress response syndromes was Grinker (1945). Grinker (1945) noted that aggression was a prominent feature in the stressed soldier's symptom pattern and was the result of the fear of injury. Glass (1969) made note of the "old sergeants syndrome" which is manifested in an experienced soldier's avoidance of battle. Lifton (1973) postulates that the explosive behavior noted in Vietnam veterans is a result of unresolved death guilt. The social alienation seen in many Vietnam veterans is thought to be secondary to the inability to share feelings (Langley, 1982).

Cognitive symptoms of stress disorders have been studied by Horowitz, Wilner, Kaltreider and Alvarez (1982). "Intrusive ideas and feelings that tend to repeat aspects of the experience of the inciting event and reactions to it" (Horowitz, Wilner, Kaltreider & Alvarez, p. 91) were found to be present in most of the 64 patients they examined. Wilner (1982) notes that analyzing the contents of dreams or nightmares in veterans is a way of monitoring the progress of therapy. In a study of the REM sleep of nine Vietnam veterans with PTSD, Greenburg, Pearlman and Gampel concluded that the persistence of nightmares in those veterans was "a reflection of their continuing attempt to deal with the trauma and their continuing failure to master it" (Greenburg, Pearlman & Gampel, 1972, p. 31).

Treatment

The principles of treatment of the combat related PTSD were established by Dr. Thomas W. Salmon during World War I. Salmon demonstrated the effectiveness of treating the soldier with this disorder quickly, near the battlefield and with the expectant attitude that the soldier would return to duty after a few days of

firm but supportive treatment. Hausman and Rioch (1967) labeled Simon's principles: proximity, immediacy and expectancy. Since World War I Salmon's principles have been successfully applied in all wars in which the U.S. military were involved. As a result, significant losses of military manpower secondary to combat related APTSD were averted.

The reasoning behind the principles of proximity, immediacy and expectancy (P.I.E.) was elaborated on by Colonel D.R. Jones (1981). By treating the soldier near his unit, bonding with his unit is maintained and social support through visits by friends can occur. The principle of immediacy implies early identification of the combat related APTSD before a full blown clinical picture exists and requires prompt treatment response. By maintaining an expectant attitude that the soldier will return to duty, that soldier receives nonverbal and verbal reassurances that his condition is transient and not unusual (Jones, D.R., 1981). Beyond treating the soldier with combat related APTSD quickly, near his unit and like a soldier the primary treatment elements are "rest, organized work details or recreation and individual and group talk therapy" (Ingraham & Manning, 1980). Fatigue is invariably present in the combat related APTSD (Glass, 1969). Thus a good part of the treatment requires that the soldiers rest needs are considered (Peterson & Chambers, 1952).

While medication is generally discouraged, a mild sedative such as Serax can be safely administered (Jones, D.R., 1981). In Vietnam, soldiers with combat related APTSD were observed to sleep 24 to 48 hours without interruption and awake ready to return to duty (Pettera, Johnson & Zimmer, 1969). Through organized work

details the soldier is helped to maintain his military identity. Individual treatment aims at facilitating the abreaction of the traumatic memories (Van Putten & Emory, 1973). Glass (1954) pointed out that abreaction has a present oriented focus with the goal of restoring the individual's defenses. Group therapy offers the soldier social support as he deals with powerful feeling that he and other group members share as they reveal similar traumas to one another (Nash and Walker, 1973). The length of treatment varies from a couple of days to one week (Grinker, 1945; Renner, 1973; Jones, D.R., 1981). With the principles of proximity, immediacy, and expectancy applied to a soldier early in his development of combat related APTSD there is every reason to believe that: a slice of P.I.E. will get him by.

The military psychiatry principles stated in the preceding paragraph have received validation from the civilian psychiatry experience. Lindemann (1944) studied the families of victims of the tragic Coconut Grove Supper Club fire and found that abreaction and early intervention were an important part of the resolution of the greiving process. Later, Lindemann teamed up with Caplan (who served in the military during World War II) and developed the roots of crisis theory and crisis intervention. Caplan defined crisis as a state:

...provoked when a person faces an obstacle to important life goals that is, for a time insurmountable through the utilization of customary methods of problem-solving. A period of disorganization ensues, a period of upset, during which many different abortive attempts at solution are made. Eventually some kind of adaptation is achieved which may or may not be in the best interest of that person and his fellows.

(Caplan quoted in Darbonne, 1968,
p. 372)

That definition sounds applicable to the soldier with combat related APTSD. Crisis intervention is a therapy in which "the focus is on the stressor and client-environment interaction" (Modlin, 1979, p. 19). Thus crisis intervention is different from traditional psychotherapy as it focuses on the "here and now" rather than the "then and when". Intervention techniques involve: defining the crisis stressor; providing immediate help; offering support and reassurance; and marshalling supportive resources (Modlin, 1979). Crisis intervention is accomplished in four to six sessions (Jacobson, 1975).

Disaster literature also validates the treatment principles of military psychiatry. Heffron (1977) reported on the activity of 50 volunteer crisis interveners with the residents in Wilkes-Barre after tropical storm Agnes. From his observations of the 32 month "Project Outreach", Heffron concludes the provision of people to whom victims could ventilate decreased the psychological impact of the disaster. Spicka and Fraser (1981) describe the disaster plan of the Dayton area to meet the emotional needs of disaster victims and assert that:

The facilitation of an on site concerned intervener to normalize these responses, convene support networks and work through emotional trauma to restore predictability can greatly reduce the time and intensity of such suffering.

(Spicka and Frazer, 1981, p. 257)

In their review of the expected psychological reactions to disaster, Hartmann and Allison (1981) note that "too much pity and overprotectiveness can be harmful...the more the victim can do on his own the quicker the recovery" (p. 325).

Prevention

A notable contributor to prevention theory in psychiatry is Gerald Caplan. Caplan's book "Principles of Preventive Psychiatry" is the foundation for psychiatric preventive thought. The critical and most novel part of Caplan's conceptual framework for preventive psychiatry was his concept of primary prevention:

Primary prevention is a community concept that involves lowering the rate of new cases of mental disorder in a population over a certain period by counteracting harmful circumstances before they have had a chance to produce illness. It does not seek to prevent a specific person from becoming sick. Instead, it seeks to reduce the risk for a whole population, so that, although some may become ill, their number will be reduced. It thus contrasts with individual-patient-oriented psychiatry, which focuses on a single person and deals with general influences only insofar as they are combined in his unique experience. When a program of primary prevention deals with an individual, he is seen as the representative of a group, and his treatment is determined not only by his own needs but in relation to the extent of the community problem he represents and the resources available to deal with it. Moreover, the information which is collected about his case is used not only to make an individual diagnosis, but also to help form a picture of the situation and the other members of his group or class.

(Caplan, 1964, p. 26).

To accomplish primary prevention there must be social action aimed at providing the targeted population with appropriate supplies. These supplies are: physical (e.g., food, shelter, rest); psychosocial (e.g., interpersonal relatedness); and sociocultural (e.g., societal values and structure) (Caplan, 1964).

The U.S. Army took the lead in this preventive focus in the military and in 1961 began to delineate the primary, secondary and tertiary prevention models of its mental health services (Hausman and Rioch, 1967). Under the auspices of primary prevention came the role of the mental health professional as an organizational consultant

to the combat unit commander. Brigadier General William C. Menninger was a prime mover in the development of the consultant role (Bey and Smith, 1971). In support of General Menninger, Major General W. Westmoreland (1963) wrote an article in which he emphasized that mental health is an aspect command. He went on to say that effective leaders must have an understanding of human behavior and an ability to communicate (Westmoreland, 1963). An aspect of leadership that is important to implement in the military is the provision realistic training. As a "disaster subculture" (Wenger, 1978, p. 41), the military is obliged to protect society from the threat of war. Tyhurst observed that most of us learn by doing. Thus, to minimize the psychological impact of disaster: "the majority must prepare and plan through trial actions in a setting as closely resembling or representing the changed circumstances as possible" (Tyhurst, 1957, p. 162). In a study of three Japanese cities after earthquake disasters, Takuma (1978) made an observation similar to that of Tyhurst. Colonel D.R. Jones asserts: "Knowledge of what to expect will help you master your own feeling, and enable you to provide the best possible service to your unit" (Jones, D.R., 1981, p. 8).

Beyond good leadership, primary prevention is effected by high morale, group cohesiveness and social support. The sociologists Lang and Lang (1964) discussed morale in their essay on the collective responses to threat:

...the ability of members of a group to stick together under stress is not solely a matter of individual esprit but also of the cohesiveness of the group. High interpersonal satisfactions enable persons in a group to cope collectively and in a cooperative manner with threatening situations from which they would withdraw as individuals.

(Lang & Lang, 1964, p. 59)

Bey (1972) noted that American soldiers during World War II continued to fight not out of hate for their enemy but rather out of love for their comrades. Archibald, et al. (1962) noted that the combat unit is an unusually interdependent group and that symbiosis of combat groups has been acknowledged for years. They illustrate their point by citing the following poem:

We few, we happy few
We band of brothers
For he today that sheds his blood with me
Shall be my brother

Henry V

(Quoted in Archibald, et al., 1962,
p. 321).

Social support was found to be a mediating factor in the amount of distress experienced by psychiatric patients of Three Mile Island (Bromet, Schulberg, & Dunn, 1982). Bromet, et al., compared 151 psychiatric patients from Three Mile Island with 64 controls immediately after, 9 to 10 months after, and one year after the nuclear incident. A major finding of that study is the positive mediating effect of social support on the report of emotional distress by the subjects. Other primary prevention methods include: providing the soldier with adequate food, rest and shelter; and provision of proper and functioning equipment (Hayes, 1970).

Secondary prevention entails early diagnosis and prompt treatment (Lindemann, 1944; Tyhurst, 1957; Parad, 1961). The military goals of secondary prevention are: reduction of psychic distress; return to the previous or a better level of functioning; return to duty; and prevention of chronic psychiatric disability (Glass, 1969). Methods of secondary prevention are outlined in the treatment section of this

review of the literature. Ideally secondary prevention of combat related stress is enacted near the battlefield in a non-hospital setting (Glass, 1954).

"Tertiary prevention, as the far end of the continuum, covers both disability limitation and rehabilitation" (Parad, 1961, p. 288). Langley (1982) points out that many veterans with PTSD are misdiagnosed and suggests the development of admission questionnaires to insure that complete data is collected on the patient's war experience. Smith, Parson and Haley made similar observation and feel that misdiagnosis is a result of a knowledge deficit regarding PTSD. Therapy of combat related PTSD also entails helping the soldier to abreact. In addition, narcotherapy (Moaz & Pincus, 1979), Nardil (Hogben & Cornfield, 1981), dream analysis (Wilmer, 1982), brief psychotherapy (Horowitz, 1977), group and milieu therapy (Moses, et al., 1976) are found to be helpful in treatment and rehabilitation.

One factor that poses a problem at all levels of prevention is the lack of preparation of military health care personnel to treat these casualties. U.S. Army psychiatrists, Lieutenant Colonel Ingraham and Major Manning state: "Limited training is currently available to physicians and other mental health personnel" (Ingraham & Manning, 1980, p. 28). The reason for this is that "few psychiatrists now in uniform have ever treated battle casualties, none have ever confronted the numbers expected in the next war" (Ingraham & Manning, 1980, p. 27). In the military, psychiatrists are responsible for developing and implementing the education of the other health care team members in matters of psychiatric treatment and prevention. Thus if they are unaware of history, symptoms, treatment, prevention

and predicted incidence of the combat related APTSD a knowledge deficit exists within the entire military health care team. This knowledge deficit can be further compounded by the fact that caregivers are also vulnerable to developing this disorder (Fraser & Spicka, 1981; Hartmann & Allison, 1981; Raphael, 1981; White, 1983; Wilkinson, 1983; Van Devanter, 1983). A poignant description of the helper becoming the victim is given by former army nurse Lynda Van Devanter in her autobiographical book "Home Before Morning" (1983). This author's personal experience as a rescuer in the 1979 Wichita Falls tornado underscores the writings of the cited authors. Melick, Logue and Frederick (1982) observe that the incidence of disaster events (e.g., nuclear and chemical accidents, war) is increasing secondary to man-made technology and crowded living conditions. As a result of this observation, they predict that in the future most will be touched by at least one disaster in their lifetime (Melick, Logue & Frederick, 1982).

An additional problem is that many psychiatrists have civilian experience in the traditional psychotherapies and have difficulty transisting to the here and now treatment focus that is required for the military casualty with combat related APTSD. This leads to a propensity on the part of many psychiatrists to evacaute the soldier to a hospital for conventional psychiatric treatment. Giving more impetus to that propensity to evacuate is the belief by some military psychiatrists that this is the most humane course of action (Ingraham and Manning, 1980). In rebuttal to this belief, three points are made:

1. Somebody will go in as a replacement. A decision not to return one individual is a decision to send someone else instead.

2. The replacement, not being psychologically bonded to the unit, will not have the support of friends and will be more at risk than others.

3. The patient who is thus "helped" is being branded a psychiatric patient; the result of this may be a life-long chronic psychiatric disability.

(Jones, D.R., 1981, p. 4)

In conclusion Ingraham and Manning note:

Psychiatric casualties represent recoverable manpower on the battlefield. Whether they will be counted as assets or written off as permanent losses depends upon preparations (or lack thereof) made now, for there will be little time to improvise once the battle begins.

(Ingraham & Manning, 1980, p. 28).

In addition, it is critical to note that the most obvious and effective way to prevent the military casualty with combat related APTSD and its sequelae is to prevent combat. Unfortunately, efforts to prevent humankind from fighting humankind have met with very limited success in the past. In the present, as we seek to prevent combat, it behooves us to remember the words of the apostle Paul in his letter to the people Ephesus: "For our fight is not against human foes, but against authorities and potentates of this dark world, against the superhuman forces of evil in the heavens" (The New English Bible, Ephesians 6:12).

Summary

In the next war in which the U.S. military is involved there will be a large number of casualties with combat related Acute Post Traumatic Stress Disorder (APTSD). There is reason to believe that a general lack of knowledge exists among the military health

care disciplines in regards to this disorder. The purpose of this study is to describe the level of knowledge of the United States Air Force (USAF) nurse as to the disorder, symptoms, treatment and prevention of the military casualty with combat related APTSD.

The combat related APTSD is a specific subtype of the Post Traumatic Stress Disorder as defined in the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., 1980). In the Civil War this disorder was called "nostalgia"; in World War I "shell shock"; in World War II "war neurosis", "psychoneurosis", and "combat exhaustion"; in the Korean Conflict "combat exhaustion" and "combat fatigue"; and in the Vietnam Era "combat fatigue". Predisposers to this disorder are: intrapsychic; interpersonal or social; environmental; and physical. In treating this disorder the principles of proximity, immediacy and expectancy are applied. Rest, individual and group therapy are also used in treatment. Primary prevention rests mainly on good leadership; provision of adequate physical supplies; and the development of group cohesion within the military unit. In secondary prevention the principles of treatment are applied with the goal of reducing distress and returning the soldier to duty. In tertiary prevention treatment is aimed at relieving the distress and maximizing rehabilitation. A problem area for the military is the limited knowledge of its health care personnel in regards to the military casualty with combat related APTSD.

Research Questions

This descriptive study will gather data to answer five general questions:

1. What is the USAF nurses' level of knowledge in regards to the disorder, symptoms, treatment and prevention of military casualty with combat related APTSD?

2. Is there a difference among USAF nurses in relation to their level of knowledge across nursing specialty areas?

3. What is the USAF nurses' major source of information about the military casualty with combat related APTSD?

4. What is the experience of USAF nurses in treating the military casualty with combat related APTSD?

5. Do USAF nurses desire more information about combat related APTSD?

CHAPTER II

Methodology

Research Design

This was a descriptive correlational/relation-searching study (Polit & Hungler, 1978; Diers, 1979). The primary research variable was the level of knowledge (as assessed by the scores on an author designed questionnaire) in regards to the military casualty with combat related Acute Post Traumatic Stress Disorder (APTSD). The primary research variable, level of knowledge as described by score, was also broken down into four groups of subscores: level of knowledge of the disorder; level of knowledge of the symptoms; level of knowledge of the treatment; and level of knowledge of the prevention of the military casualty with combat related APTSD.

The potentially related and unmanipulated variables used to answer the research questions were the respondents' primary nursing specialty areas (i.e., medical-surgical; pediatrics; obstetrics-gynecology; psychiatry; and operating room); main source of information in regards to the military casualty with combat related APTSD; experience caring for the military casualty with combat related APTSD; and reported desire for more information on the military casualty with combat related APTSD. Other potentially related and unmanipulated variables in this study included: years of nursing experience; education; age; sex; formal education on the military casualty with combat related APTSD; the feeling that one has adequate information about the military casualty with combat related APTSD; years of experience in the military; willingness to care for the military casualty with combat related APTSD; personal experience of combat related APTSD; military rank; nursing

experience in a combat area; non-nursing experience in a combat area; and non-nursing military experience.

Operational Definitions

Combat related Acute Post Traumatic Stress Disorder (APTSD):

Post Traumatic Stress Disorder (PTSD) as defined by the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., 1980) in which the precipitant stressor is described as combat related and symptom onset begins within six months of the stressor.

Military casualty: A member of the United States armed forces who is lost to active service.

United States Air Force (USAF) nurse: A registered professional nurse who is currently on active duty in the USAF Nurse Corps.

Sample

A simple random sample of 600 USAF nurses was taken from the total population of 4,504 USAF nurses stationed worldwide. The only criteria for inclusion in this sample was that the respondent be a USAF nurse.

Data Collection Instrument

To this author's knowledge, no data collection instrument or test is currently available to assess the level of knowledge in regards to the military casualty with combat related APTSD. Thus, after reviewing the literature on tool design (Polit & Hungler, 1978; Sweeney & Olivieri, 1981; Sudman & Bradburn, 1982), this author designed her own instrument. The instrument was a two part written questionnaire entitled "Combat Fatigue Questionnaire" (Appendix A), and contained a total of 45 questions.

Part one of the "Combat Fatigue Questionnaire" was comprised of a total of 25 variables that were housed in level of knowledge questions designed to collect data on the five primary research variables. The

primary research variables were; overall level of knowledge of the military casualty with combat related APTSD (total score), level of knowledge specific to the disorder itself (disorder sub-score), level of knowledge specific to the symptoms (symptom sub-score), level of knowledge specific to the treatment (treatment sub-score), and level of knowledge specific to the prevention of the military casualty with combat related APTSD (prevention sub-score). The content for these questions were obtained by this author through a review of the literature on the military casualty with combat related APTSD. The questions were close-ended (or fixed alternative) and each question offered the respondent five choices. There was a possible range of 0 to 100 for the total score. The possible ranges for the sub-scores were: 0 to 28 for the disorder sub-score; 0 to 20 for the symptom sub-score; 0 to 32 for the treatment sub-score; and 0 to 20 for the prevention sub-score.

Part two of the "Combat Fatigue Questionnaire" contained 20 questions which solicited information on the respondents: demographics (e.g. age, sex, education, military rank, military experience); feelings about combat fatigue; source of information about combat fatigue; and experience with combat fatigue. To insure anonymity and increase the response rate, the respondents were not asked for their name, duty assignment or social security number. All questions on this portion of the questionnaire were also closed-ended/fixed alternative in structure with a range of 2 through 12 possible answers for each question. Six of the possible responses provided an opportunity for the respondent to elaborate on that response. For example, if the respondent answered "Yes" to the question "Would you object to taking care of a soldier with combat fatigue?" they were asked to "please explain".

This author pre-tested this instrument on a total of 13 subjects that were not included in the researched population. These 13 subjects comprised a convenience sample. All of the 13 pre-test respondents possessed at least a bachelor's degree (two had post-graduate degrees). Eight of the pretest respondents were nurses: six were psychiatric nurses; one was an U.S. Army nurse; and one was a medical-surgical nurse. The remaining five in pretest sample were non-nurse professionals (three teachers, one medical illustrator and one civil engineer). The range of total score for these respondents was 28 to 80 points (out of a potential 100). The mean of these 13 scores was 62.6 with four respondents scoring the mode of 72. It is important to note that eight of the respondents scored in the range of 68 to 80 on this questionnaire. This author postulates several reasons for the occurrence of seven of those medium ranged scores: five of those respondents were psychiatric nurses who attended a one hour presentation, given by this author, on the military casualty with combat related APTSD about nine months prior to taking the pretest; one respondent was a U.S. Army nurse who had recently completed a course on the topic; and one respondent was a psychiatric nurse in the process of doing a literature review on PTSD. The final respondent who scored within the medium range (a medical illustrator and housemate of one of the psychiatric nurses) explained that he was an avid viewer of the television series "Mash". The remaining five respondents (i.e. a civil engineer, three teachers, and a medical surgical nurse) total scores ranged from 28 to 56 (which is about what this author would expect from an uneducated population). The pretest respondents were asked to comment on the brevity, readability and comprehensibility of

the questionnaire. The respondents reported that the questionnaire was easy to read, readily understandable and took about 6 to 15 minutes to complete.

Content validation was accomplished by submitting the questionnaire to the USAF's expert on the military casualty with combat related APTSD, Colonel David R. Jones, Chief, Neuropsychiatry Branch of the School of Aerospace Medicine, Brooks Air Force Base, Texas. Reliability of the instrument was established through the test-retest method. The subjects were retested three to four months after the initial test was accomplished. A correlation of .65 was obtained by the Pearson R method.

Data Collection Procedures

To insure that the respondents were protected, this author's research proposal along with a copy of the data collection instrument and the instrument's cover letter (Appendix B) was submitted to the Yale University School of Nursing Human Subjects Review Committee for approval. Approval was granted on December 1, 1983 by that committee. In addition, the research proposal and questionnaire was submitted to the Air Force Institute of Technology (Wright-Patterson Air Force Base, Ohio) and Headquarters Air Force Manpower Personnel Center (Randolph Air Force Base, Texas) for USAF approval and assignation of a survey approval number. USAF approval was granted on January 13, 1984.

Shortly after USAF approval, this author received a complete list of the names of the 4,504 USAF nurses then on active duty. Using a random numbers table from a general statistics text (Haber & Runyon, 1977), 600 (13.3% of the total USAF nurse population) names were selected. The "Combat Fatigue Questionnaire" was mailed between January 30, 1984 and February 12, 1984 to the 600 randomly selected

USAF nurses; along with a cover letter (Appendix B) and a stamped envelope addressed to this author. The data collection period began on February 5, 1984 when this author received the first returned questionnaires. The data collection period ended on March 15, 1984.

Data Analysis

Data analysis was largely accomplished through the use of the "Statistical Package For The Social Sciences" (SPSS, 1975) programs (i.e. FREQUENCIES, BREAKDOWN, CROSSTABS, REGRESSION, ANOVA) at the Yale University Computer Center. Initially, the response rate was calculated by this author. Then the raw data were coded and fed into the computer. The contents of all cases were listed and general frequencies on all variables were run. Level of knowledge scores and sub-scores were calculated on all cases for variables 1 to 25; the mean score, standard deviation and median score were determined. Next the questionnaire responses were broken down by nursing specialty categories with mean scores, median scores, and standard deviations calculated for each. An ANOVA was run to assess the significance of the difference in means between the nurse specialty groups as it relates to the total level of knowledge score and the four subscores (i.e. disorder, symptoms, treatment, and prevention). Following the ANOVA, frequencies on variables 26 through 45 were crosstabulated by scores. Then a multiple stepwise regression was run to determine the correlation between scores and the interval level variables. Finally, multiple classification analysis was done on the categorical and ordinal level variables.

CHAPTER III

Data Analysis

Response Rate

This researcher mailed 600 "Combat Fatigue" questionnaires to United States Air Force (USAF) nurses. Of the 600 mailed there were 16 returned to this researcher due to the inability of the U.S. Postal Service to deliver those questionnaires to the addressees. Of the 584 questionnaires delivered 361 were completed and returned to this researcher. Thus, the response rate was 62%.

Demographic DataSex and Age

All 361 respondents reported their sex. There were 286 female respondents and 75 male respondents; they comprised 79% and 21% of the population respectively (see Figure 1). Three hundred and fifty seven respondents reported their age. Ages ranged from 22 to 56 years old (see Table 1) with the most frequently reported age being 31 years (n=30 or 8.4%).

Table 1

Raw Frequencies and Percentages of Respondent Ages

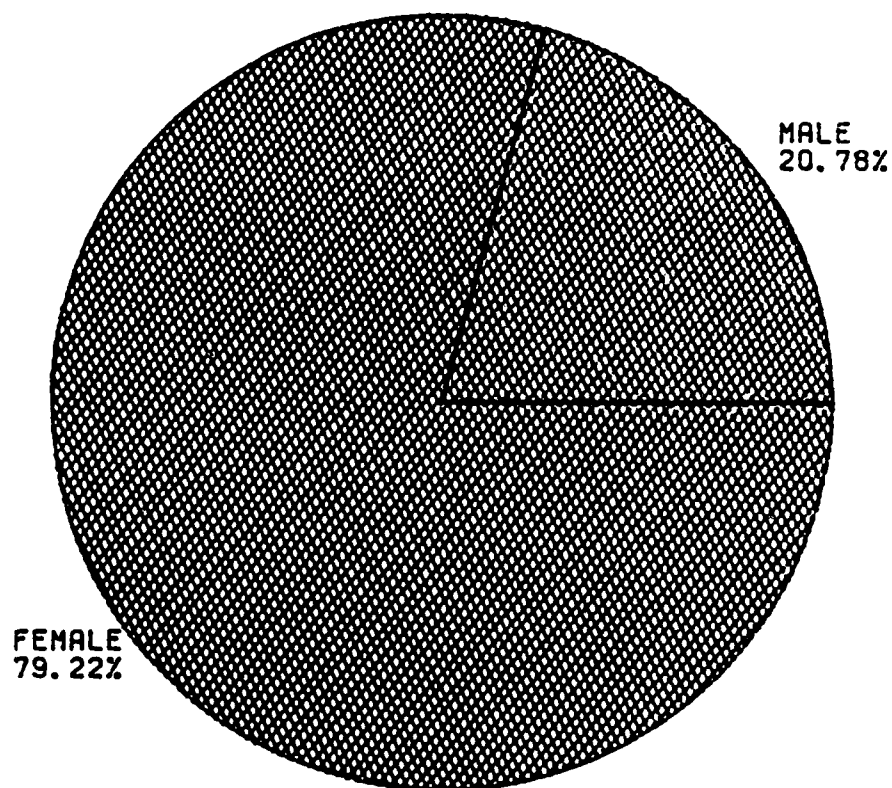
| Age Range | n | % | Cumulative % |
|---------------|-----|-------|--------------|
| 22 through 30 | 149 | 41.6% | 41.6% |
| 31 through 39 | 150 | 42.0% | 83.6% |
| 40 through 48 | 52 | 14.7% | 98.3% |
| 49 through 56 | 6 | 1.7% | 100% |

Note. N = 361

Figure 1

RESPONDENT POPULATION BY SEX

PERCENT OF SEX



Female N = 286

Male N = 75

Of these 357 respondents 149 (41.6%) ranged in age from 22 to 30 years; 150 (42%) were from 31 to 39 years of age; 52 (14.7%) were from 40 to 48 years of age; and 6 (1.7%) were from 49 to 56 years old.

Education

Three hundred and fifty seven respondents reported their highest completed educational level. The range was from an Associate of Art degree to a Master's degree. Of the 357: 12 (3.4%) completed Associate of Art degrees; 39 (10.9%) received hospital diplomas; 35 (9.8%) completed Bachelor of Art or Bachelor of Science degrees; 209 (58.5%) completed Bachelor of Science in Nursing degrees; 39 (10.9%) completed Master of Art or Master of Science degrees; and 23 (6.4%) completed Master of Science in Nursing degrees (see Figure 2).

Nursing Experience

Years of nursing experience were reported by 358 of the respondents. Their nursing experience varied from less than 1 year to over 20 years. Of the 358 respondents: 79 (22.1%) had less than 4 years experience; 72 (20.1%) had at least 4 but less than 8 years of nursing experience; 82 (22.9%) had at least 8 but less than 12 years of nursing experience; 52 (14.5%) had at least 12 but less than 16 years of nursing experience; 32 (8.9%) had at least 16 but less than 20 years of nursing experience; and 41 (11.5%) had 20 or more years of nursing experience (see Table 2).

Primary Nursing Specialty Area

Three hundred and sixty respondents identified their primary nursing specialty area (see Figure 3). Of the 360: 199 (55.3%) were in medical-surgical areas; 24 (6.7%) were in pediatric areas; 66 (18.3%) were in obstetrical-gynecological areas; 14 (3.9%) were in psychiatric areas; 35 (9.7%) were in operating rooms; and 22 (6.11%) were in other areas (i.e. 10 in administration; 4 in education; 5 in environmental health; 1 in community health and 2 in clinics).

Figure 2

RESPONDENT POPULATION BY EDUCATIONAL LEVEL

PERCENT OF EDUC

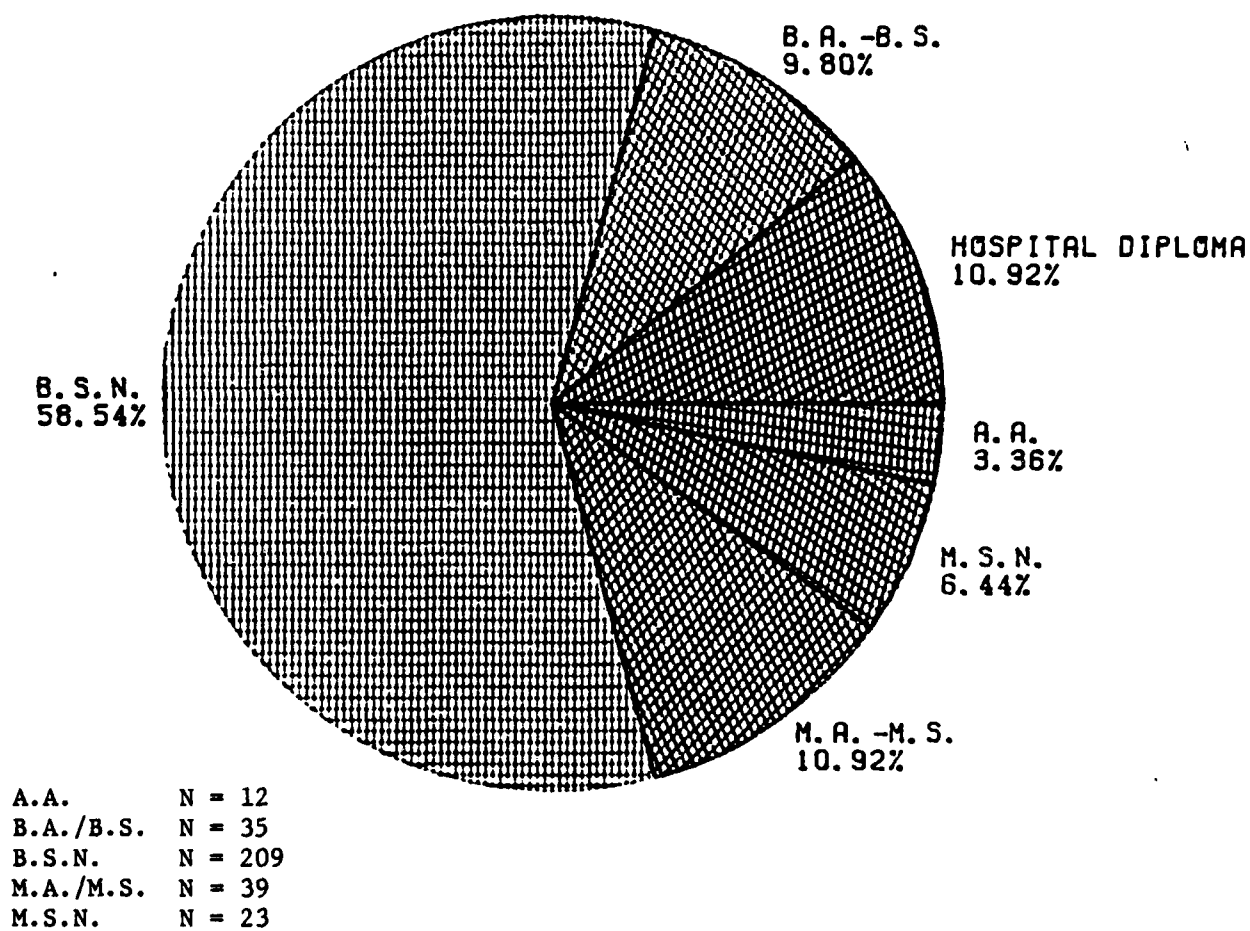


Table 2

Raw Frequencies and Percentages of Respondents' Years of Nursing Experience

| Years in Nursing | n | % | Cumulative % |
|---------------------|----|-------|--------------|
| less than 4 | 79 | 22.1% | 22.1% |
| 4 but less than 8 | 72 | 20.1% | 42.2% |
| 8 but less than 12 | 82 | 22.9% | 65.1% |
| 12 but less than 16 | 52 | 14.5% | 79.6% |
| 16 but less than 20 | 32 | 8.9% | 88.5% |
| 20 or more | 41 | 11.5% | 100% |

Note. N = 358

Military Experience

Three hundred and sixty one respondents reported their years of military service. Among these respondents years of service in the military varied from less than 1 to over 20 years. The most frequently reported length of military service was at least 2 years but less than 4 years (n = 63, 17.5% of the sample). Of the 361 respondents who reported their years in the military: 120 (33.3%) had less than four years of service; 80 (22.2%) had at least four years in military service but less than eight years; 58 (16%) had eight but less than 12 years in the military; 53 (14.6%) had at least 12 but less than 16 years of service; 33 (9.1%) had at least 16 but less than 20 years in the military; and 17 (4.7%) had spent at least 30 years in military service (see Table 3).

Figure 3

RESPONDENT POPULATION BY PRIMARY NURSING SPECIALTY AREA
PERCENT OF PNSPEC

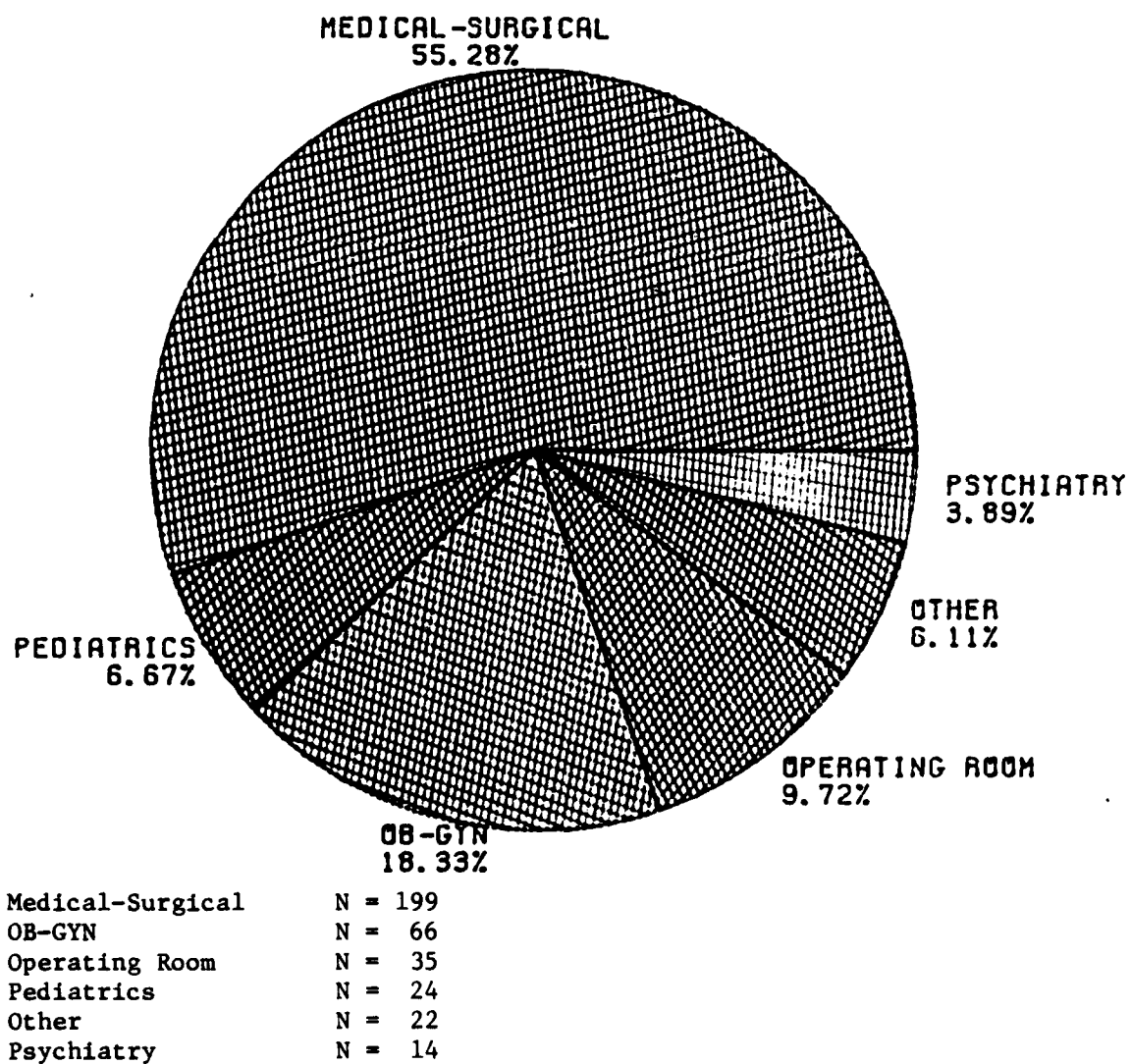


Table 3

Raw Frequencies and Percentages of Respondents' Years in the Military

| Years in the Military | n | % | Cumulative % |
|-----------------------|-----|-------|--------------|
| less than 4 | 120 | 33.3% | 33.3% |
| 4 but less than 8 | 80 | 22.2% | 55.5% |
| 8 but less than 12 | 58 | 16.1% | 71.6% |
| 12 but less than 16 | 53 | 14.6% | 86.2% |
| 16 but less than 20 | 33 | 9.1% | 95.3% |
| 20 or more | 17 | 4.7% | 100% |

Note. Total N = 361

Military Rank

Three hundred and sixty respondents reported their military rank (see Figure 4). The range of military rank was from second lieutenant to colonel. Of those 360: 57 (15.8%) were 2nd lieutenants; 24 (6.7%) were 1st lieutenants; 181 (50.3%) were captains; 60 (16.7%) were majors; 33 (9.2%) were lieutenant colonels; and 5 (1.4%) were colonels.

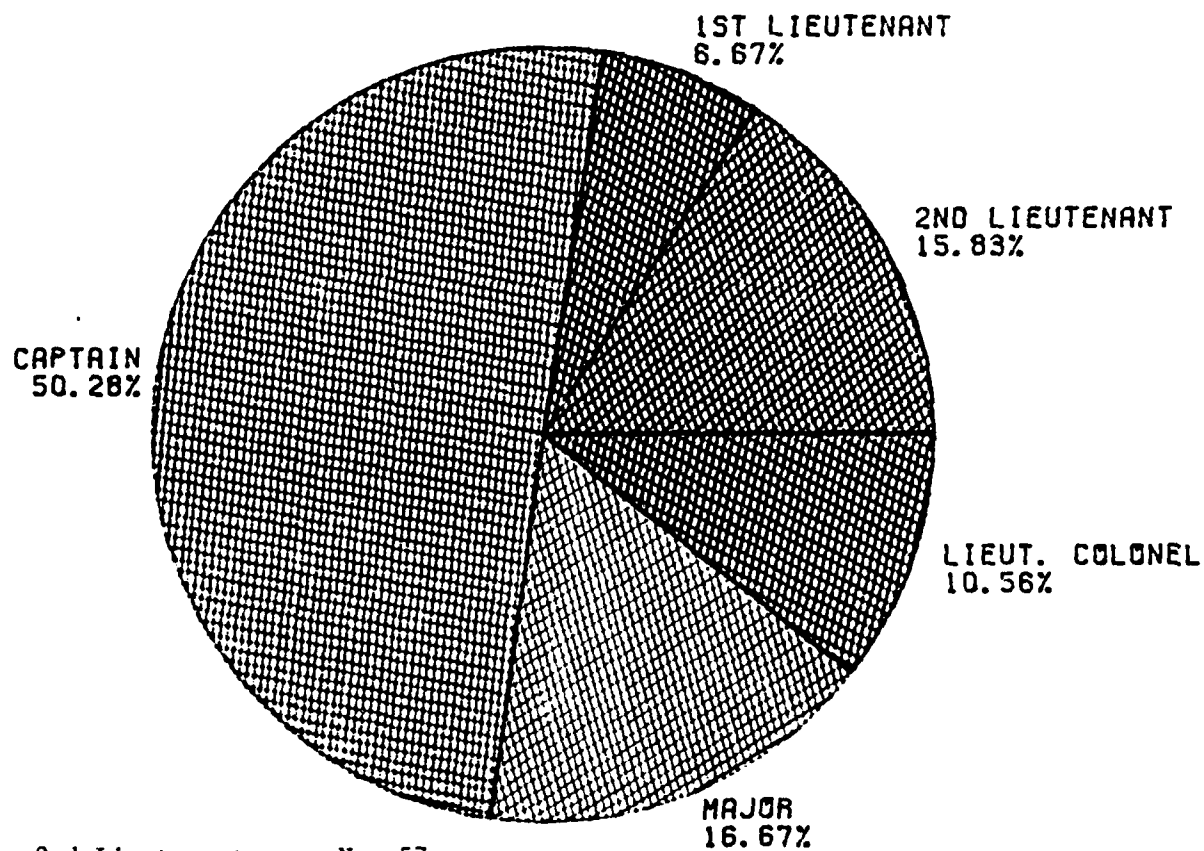
Research QuestionsResearch Question One

What is the USAF nurses' level of knowledge in regards to the disorder, symptoms, treatment and prevention of the military casualty with combat related APTSD?

Total scores. Each of the 361 respondents received a total score based on their answers to the level of knowledge questions (viz., variables 1 to 25) in the "Combat Fatigue Questionnaire" (Appendix A). Each correct response was given four points and the possible total score range was from 0 to 100. The actual range of respondent scores was

RESPONDENT POPULATION BY MILITARY RANK

PERCENT OF RANK



| | |
|---------------------------------|---------|
| 2nd Lieutenant | N = 57 |
| 1st Lieutenant | N = 24 |
| Captain | N = 181 |
| Major | N = 60 |
| Lieutenant Colonel & Colonel | N = 38 |

from 0 to 92 (see Figure 5). The total score mean was 61.9, the median was 63.9, and the standard deviation was 14.2. Forty nine respondents (13.6%) received the most frequently obtained total score of 68.

This researcher divided the total scores into four groups:

(a) very low -- the range in this group of scores was 0 to 36; (b) low -- the range of scores in this group was 40 to 56; (c) moderate -- the range of scores in this group was 60 to 76; and high 80 to 92. Of the 361 respondent total scores 5% ($n = 18$) were in the very low total score group; 29.9% ($n = 108$) were in the low total score group; 54.6% ($n = 197$) were in the moderate total score group; and 11.5% were in the high total score group (see Table 4).

Table 4

Raw Frequencies and Percentages of Total Score by Groups

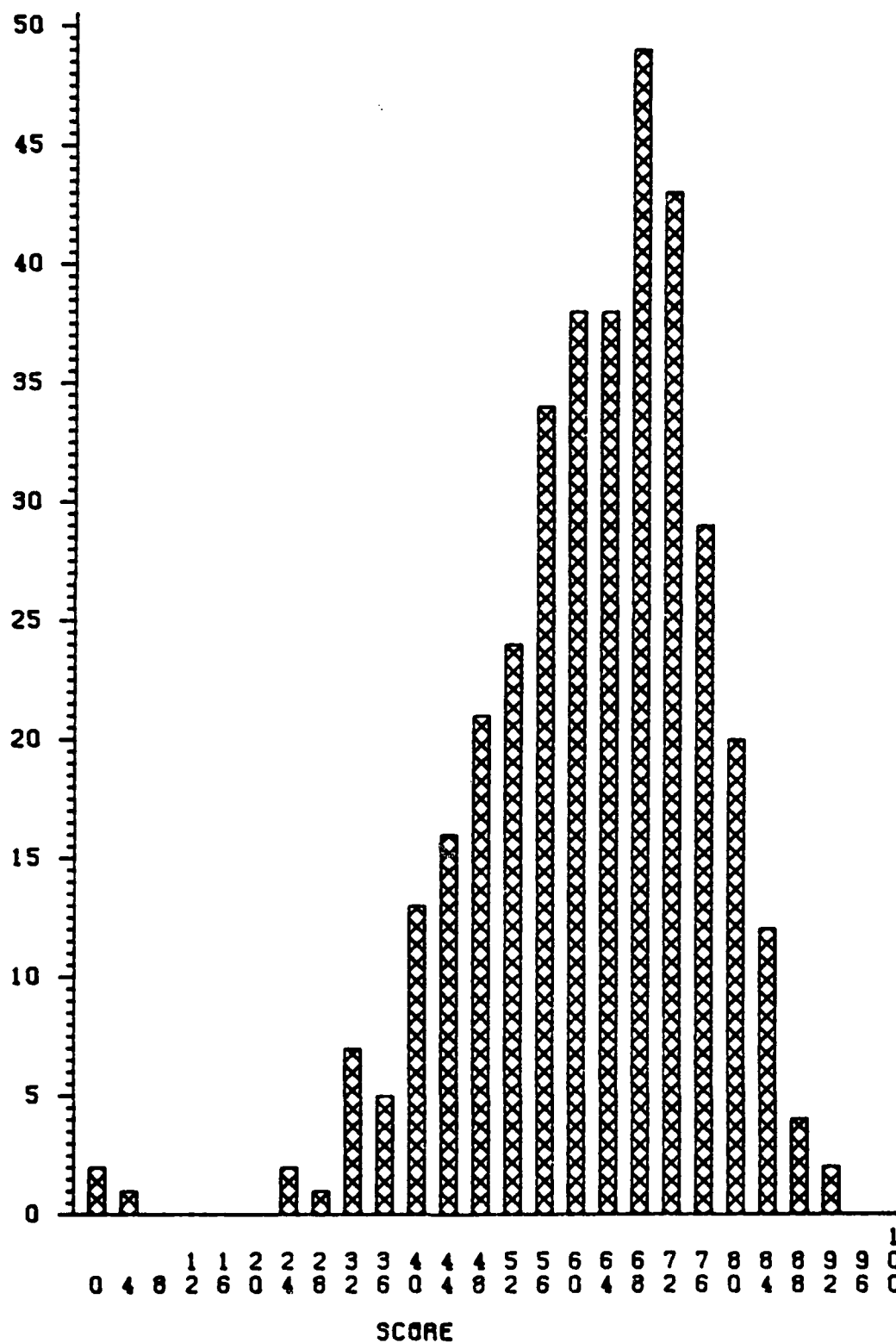
| Group | Range | n | % | Cumulative % |
|----------|----------|-------------|-------|--------------|
| Very low | 0 to 36 | 18 | 5% | 5% |
| Low | 40 to 56 | 108 | 29.9% | 34.9% |
| Moderate | 60 to 76 | 197 | 54.6% | 89.5% |
| High | 80 to 92 | 38 | 11.5% | 100% |
| | | N = 361 | | |
| | | M = 61.9 | | |
| | | S.D. = 14.2 | | |

Note. Scores are noncontiguous

Disorder subscores. The disorder subscore represents one of four subscores (viz., the symptom subscore, the treatment subscore, and the prevention subscore) that comprise the total score. The disorder subscore had a possible range of 0 to 28; the actual range among respondents was

DISTRIBUTION OF ALL RESPONDENT SCORES

FREQUENCY



0 to 28. The disorder subscore mean was 19.3, the standard deviation was 5.0, and the median was 19.9 (see Table 5). One hundred thirteen respondents (31%) received the most frequently obtained disorder subscore of 20.

Table 5

Raw Frequencies and Percentages of Disorder Subscores

| Score Range | n | % | Cumulative % |
|-------------|-----|-------|--------------|
| 0 to 8 | 13 | 3.6% | 3.6% |
| 12 to 20 | 236 | 65.4% | 69% |
| 24 to 28 | 102 | 31.0% | 100% |
| N = 361 | | | |
| M = 19.2 | | | |
| S.D. = 5.0 | | | |

Note. Scores are noncontiguous

Symptom subscores. There was a possible symptom subscore range of 0 to 20; the respondents actual range was 0 to 20. The symptom subscore mean was 12.7, the median was 12.2, and the standard deviation was 4.1 (see Table 6). Thirty five percent of the respondents received a modal symptom subscore of 12 (n = 127).

Treatment subscores. The potential range of treatment subscores was 0 to 32; the respondents actual treatment subscores were 0 to 32. The treatment subscore mean was 14.9, the median was 15.7, and the standard deviation was 7.5 (see Table 7). Seventy nine respondents (21.9%) received the most frequently obtained treatment subscore of 16.

Table 6

Raw Frequencies and Percentages of Symptom Subscores

| Score Range | n | % | Cumulative % |
|-------------|-----|-------|--------------|
| 0 to 8 | 87 | 24.1% | 24.1% |
| 12 to 20 | 274 | 75.9% | 100% |

N = 361

M = 12.7

S.D. = 4.1

Note. Scores are noncontiguous

Table 7

Raw Frequencies and Percentages of Treatment Subscores

| Score Range | n | % | Cumulative % |
|-------------|-----|-------|--------------|
| 0 to 8 | 98 | 27.1% | 27.1% |
| 12 to 20 | 203 | 56.3% | 83.4% |
| 24 to 32 | 60 | 16.6% | 100% |

N = 361

M = 14.9

S.D. = 7.5

Note. Scores are noncontiguous

Prevention subscores. The potential range of prevention subscores was from 0 to 20; the respondents' actual range of prevention subscores was 0 to 20. The prevention subscore mean was 15.1, the median was 15.8,

and the standard deviation was 4.5 (see Table 8). Of all the respondents, 40.4% (n = 145) scored the mode score of 16.

Table 8

Raw Frequencies and Percentages of Prevention Subscores

| Score Range | n | % | Cumulative % |
|-------------|-----|-------|--------------|
| 0 to 8 | 50 | 13.9% | 13.9% |
| 12 to 20 | 311 | 86.1% | 100% |
| N = 361 | | | |
| M = 15.1 | | | |
| S.D. = 4.5 | | | |

Note. Scores are noncontiguous

Research Question Two

Is there a difference among USAF nurses in relation to their level of knowledge across nursing specialty areas?

Total score means and standard deviations by nursing specialty group. The respondents' total scores were separated into groups according to the respondent's identified primary nursing specialty area (viz., medical-surgical, pediatric, psychiatric, obstetrics-gynecology, operating room and other). Of 361 respondents 360 (99.7%) identified a primary nurse specialty area (see Figure 2). The total score mean for the entire population of respondents (n = 360) was 61.94 with a standard deviation of 14.24. Respondents in the medical surgical group (n = 199) received a total score mean of 61.40 with a standard deviation of 14.53; respondents in the pediatric group received a total score mean of 63.50 with a standard deviation of 16.73; respondents in the obstetrics-gynecology group received a total score mean of 59.03 with a standard

deviation of 11.74; respondents in the psychiatric group received a total score mean of 65.43 with a standard deviation of 21.99; respondents in the operating room group received a total score mean of 61.71 with a standard deviation of 12.17; and respondents in the other group received a total score mean of 72.00 with a standard deviation of 7.51 (see Table 9).

Table 9

Total Score Means and Standard Deviations by Nursing Specialty Group

| Group | n | mean | s.d. |
|-----------------------|-----|-------|-------|
| Medical-Surgical | 199 | 61.40 | 14.53 |
| Pediatric | 24 | 63.50 | 16.73 |
| Obstetrics-Gynecology | 66 | 59.03 | 11.74 |
| Psychiatric | 14 | 65.43 | 21.99 |
| Operating Room | 35 | 61.71 | 12.17 |
| Other | 22 | 72.00 | 7.51 |

N = 360

M = 61.94

S.D. = 14.24

A simple ANOVA was run to compare the nursing specialty area group means on the primary research variable of total score. A significant difference ($p < 0.01$) was found to exist between the groups on their level of knowledge as measured by total score. This was evidenced by the ANOVA significance value of 0.009 (see Table 10).

Disorder subscore means and standard deviations by nursing specialty groups. The entire respondent population (N = 360) received a disorder subscore mean of 19.29 with a standard deviation of 5.02.

Table 10

ANOVA of Total Score by Nursing Specialty Area

| Source | D.F. | Mean Sq. | F | Sig. |
|----------------|------|----------|------|-------|
| Between Groups | 5 | 614.47 | 3.12 | 0.009 |
| Within Groups | 354 | 196.96 | | |

The respondents of the medical-surgical group received a disorder subscore mean of 19.63 with a standard deviation of 5.29; the pediatric group disorder subscore mean was 19.67 with a standard deviation of 4.99; the obstetrics-gynecology group had a disorder subscore mean of 18.12 with a standard deviation of 4.56; the psychiatric group received a disorder subscore of 18.57 with a standard deviation of 6.00; the operating room group received a disorder subscore mean of 18.86 with a standard deviation of 4.51; and the other group received a disorder subscore mean of 20.36 with a standard deviation of 3.47 (see Table 11).

Table 11

Disorder Subscore Means and Standard Deviations by Nursing Specialty Group

| Group | n | mean | s.d. |
|-----------------------|-----|-------|------|
| Medical-Surgical | 199 | 19.63 | 5.29 |
| Pediatric | 24 | 19.67 | 4.99 |
| Obstetrics-Gynecology | 66 | 18.62 | 4.56 |
| Psychiatric | 14 | 18.57 | 6.00 |
| Operating Room | 35 | 18.86 | 4.51 |
| Other | 22 | 20.36 | 3.47 |

N = 360

M = 19.29

S.D. = 5.02

A simple ANOVA was run to compare the group means on the disorder subscore. No significant difference exists between groups as evidence by an insignificant alpha level of .28 (p.05 or less would be needed in order to be significant).

Symptom subscore means and standard deviations by nursing specialty groups. The entire population of respondents (N = 360) received a symptom subscore mean of 12.71 with a standard deviation of 4.09. The medical-surgical group received a symptom subscore mean of 12.22 with a standard deviation of 4.18; the pediatric group received a symptom subscore mean of 12.83 with a standard deviation of 4.41; the obstetrics-gynecology group received a symptom subscore mean of 12.91 with a standard deviation of 3.89; the psychiatric group received a symptom subscore mean of 13.43 with a standard deviation of 4.86; the operating room group received a symptom subscore mean of 13.37 with a standard deviation of 3.49 and the other group received a symptom subscore mean of 14.91 with a standard deviation of 3.07 (see Table 12).

Table 12

Symptom Subscores Means and Standard Deviations by Nursing Specialty Groups

| Group | n | mean | s.d. |
|-----------------------|-----|-------|------|
| Medical-Surgical | 199 | 12.22 | 4.18 |
| Pediatric | 24 | 12.83 | 4.41 |
| Obstetrics-Gynecology | 66 | 12.91 | 3.89 |
| Psychiatric | 14 | 13.43 | 4.86 |
| Operating Room | 35 | 13.37 | 3.49 |
| Other | 22 | 14.91 | 3.07 |
| N = 360 | | | |
| M = 12.71 | | | |
| S.D. = 4.09 | | | |

A simple ANOVA was run to compare the symptom subscore means between the nursing specialty groups. A significant difference was found to exist at the .05 level of significance (see Table 13).

Table 13

ANOVA of Symptom Subscore Means by Nursing Specialty Groups

| Source | D.F. | Mean Sq. | F. | Sig. |
|----------------|------|----------|------|------|
| Between Groups | 5 | 35.90 | 2.18 | 0.05 |
| Within Groups | 354 | 16.425 | | |

Treatment subscore means and standard deviations by nursing specialty group. The entire population of respondents (N = 360) received a treatment subscore mean of 14.89 with a standard deviation of 7.55. The medical-surgical group received a treatment subscore mean of 14.55 with a standard deviation of 7.69; the pediatric group received a treatment subscore of 15.50 with a standard deviation of 7.85; the obstetrics-gynecology group received a treatment subscore mean of 13.21 with a standard deviation of 7.22; the psychiatric group received a treatment subscore mean of 19.43 with a standard deviation of 8.43; the operating room group received a treatment subscore mean of 14.74 with a standard deviation of 6.63; and the other group received a treatment subscore mean of 19.64 with a standard deviation of 5.08 (see Table 14).

A simple ANOVA done to compare the treatment subscores means by nursing specialty groups revealed a significant ($p < 0.01$) difference between groups as evidence by a significant alpha level of 0.003 (see Table 15).

Table 14

Treatment Subscore Means and Standard Deviations by Nursing Specialty Group

| Group | n | mean | s.d. |
|-----------------------|-----|-------|------|
| Medical-Surgical | 199 | 14.55 | 7.69 |
| Pediatrics | 24 | 15.50 | 7.85 |
| Obstetrics-Gynecology | 66 | 13.21 | 7.22 |
| Psychiatric | 14 | 19.43 | 8.43 |
| Operating Room | 35 | 14.74 | 6.63 |
| Other | 22 | 19.64 | 5.08 |

N = 360

M = 14.89

S.D. = 7.55

Table 15

ANOVA of Treatment Subscores by Nursing Specialty Group

| Source | D.F. | Mean Sq. | F. | Sig. |
|----------------|------|----------|------|-------|
| Between Groups | 5 | 200.42 | 3.64 | 0.003 |
| Within Groups | 354 | 55.03 | | |

Prevention subscore means and standard deviations by nursing specialty groups. For the entire respondent population (N = 360) the prevention subscore mean was 15.06 with a standard deviation of 4.50. The medical-surgical group treatment subscore mean was 14.99 with a standard deviation of 4.47; the pediatric group prevention subscore mean was 15.50 with a standard deviation of 5.82; the obstetrics-gynecology group prevention subscore mean was 14.79 with a standard deviation of 4.32; the psychiatric

group had a prevention subscore mean of 14.00 with a standard deviation of 6.61; the operating room group had a prevention subscore mean of 14.74 with a standard deviation of 3.85; and the other group had a prevention subscore mean of 17.09 with a standard deviation of 2.52 (see Table 16).

Table 16

Prevention Subscores Means and Standard Deviations by Nursing Specialty Group

| Group | n | mean | s.d. |
|-----------------------|-----|-------|------|
| Medical-Surgical | 199 | 14.99 | 4.47 |
| Pediatric | 24 | 15.50 | 5.82 |
| Obstetrics-Gynecology | 66 | 14.79 | 4.32 |
| Psychiatric | 14 | 14.00 | 6.61 |
| Operating Room | 35 | 14.74 | 3.85 |
| Other | 22 | 17.09 | 2.52 |
| N = 360 | | | |
| M = 15.06 | | | |
| S.D. = 4.50 | | | |

A simple ANOVA was accomplished to determine if any significant difference exists between the means of nursing specialty in regards to prevention subscores. A reported alpha level of significance of 0.31 was not enough to establish that a significant difference exists.

Research Question Three

What is the USAF nurses' major source of information about the military casualty with combat related APTSD?

In order to gather data to answer research question number three, all respondents were asked: "Your main source of information on combat

fatigue is from: (a) Medical Red Flag; (b) Inservice Education; (c) Disaster Preparedness Education; (d) Battlefield Nursing Course; (e) No source; and (f) Other. The entire respondent population (N = 361) answered this question. The most frequent answer was "No Source"; that answer accounted for 62.3% (N = 225) of the responses (see Table 17). Of the 37.7% (N = 136) of the respondents who indicated that they did have a main source of information (many indicated more than one main source), 108 indicated Medical Red Flag; 12 indicated Inservice Education; 64 indicated Disaster Preparedness Education; 19 indicated the Battlefield Nursing Course and 54 indicated other sources (see Table 18).

Table 17

Raw Frequencies and Percentages of the Respondents With and Without a Main Source of Information on Combat Fatigue

| Response | n | % |
|-----------|-----|-------|
| No source | 225 | 62.3% |
| A source | 136 | 37.7% |
| N = 361 | | |

Research Question Four

What is the experience of USAF nurses in treating the military casualty with combat related APTSD?

In order to gather information to answer research question four all respondents were asked "Have you ever cared for a soldier with combat fatigue?". Three hundred fifty eight respondents answered that question. Of that 358, only 34 (9.5) indicated that they had ever cared for a soldier with combat fatigue. Thus 324 (90.5%) of the respondents did not have experience in caring for a soldier with combat related APTSD (see Table 19).

Table 18

Raw Frequencies of the Respondents Indicating a Main Source of Information on Combat Fatigue

| Main Source | n |
|----------------------------|-----|
| Medical Red Flag | 108 |
| Inservice Education | 12 |
| Disaster Preparedness | 64 |
| Battlefield Nursing Course | 19 |
| Other | 54 |

Note. Many respondents indicated more than one main source.

Table 19

Raw Frequencies and Percentages of Responses to the Question:
"Have you ever cared for a soldier with combat fatigue?"

| Response | n | % |
|----------|-----|---------|
| Yes | 34 | 9.5% |
| No | 324 | 90.5% |
| | | N = 358 |

An interesting finding is that 12 (3.4%) of the respondents indicated that they had experienced combat fatigue.

Research Question Five

Do USAF nurses desire more information about combat related APTSD?

This researcher sought to find the answer to that question by asking the questions: "Do you feel you have adequate information on the condition, symptoms, treatment and prevention of combat fatigue?" and "You would like more information on: (a) prevention; (b) treatment;

(c) symptoms; (d) characteristics; (e) all of the above; and (f) none of the above". Of 360 respondents 327 (90.8%) indicated that they felt they had inadequate information on combat; 33 (9.2%) indicated that they felt they possessed adequate information on combat fatigue (see Table 20). However, only 25 (6.9%) respondents indicated that they desired no further information on combat fatigue.

Table 20

Raw Frequencies and Percentages of Responses to the Question: "Do you feel you have adequate information on the condition, symptoms, treatment and prevention of combat fatigue?"

| Response | n | % |
|----------|-----|-------|
| Yes | 33 | 9.2% |
| No | 327 | 90.8% |
| N = 360 | | |

Other Findings

Relationship of Interval Level Variables to Total Score

A multiple regression analysis was done to determine the relationship of the total score to the interval level variables: years of nursing experience; age; education; and years of military experience accounted for 6.2% of the variance and was significant ($p < 0.01$) as evidenced by a significant alpha level of 0.000 (see Table 21). Of the four interval level variables, one made a significant ($p < 0.01$) contribution to the explanation of variance. That variable was age. Age accounted for 5.4% of the variance and significance was evidenced by an alpha level significance of 0.000 in the final step. Education accounted for .8% of the variance, however, this was not a significant contribution (see Table 21).

Table 21

Relationship of Age and Education to Total Score

| Step Variable | Mult.R | R2 | F | Sig. of F |
|---------------|--------|-------|-------|-----------|
| Age | 0.232 | 0.054 | 20.44 | 0.000 |
| Education | 0.250 | 0.008 | 3.26 | 0.071 |

ANOVA of Total Score by Categorical and Ordinal Variables

ANOVA was accomplished on the variables: sex (SEX) and military rank (RANK) (see Table 22); experience as a nurse in combat area (NICA), experience in combat area in a capacity other than a nurse (ICA), experience of having combat fatigue (EXPCF), experience with caring for a soldier with combat fatigue (CFCF), and experience as military member in a capacity other than a nurse (OMP); primary nursing specialty (PNSPEC), and formal education on combat fatigue (FEDUCCF) (see Table 23).

Table 22

ANOVA of Total Score by Military Rank and Sex

| Source of Variation | df | Mean Sq. | F | Sig. of F |
|---------------------|-----|----------|------|-----------|
| Main Effects | 6 | 1000.80 | 5.31 | 0.000 |
| SEX | 1 | 354.19 | 1.88 | 0.171 |
| RANK | 5 | 1162.52 | 6.17 | 0.000 |
| 2-Way Interactions | 4 | 136.17 | 0.72 | 0.577 |
| Explained | 10 | 654.95 | 3.47 | 0.000 |
| Residual | 349 | 188.54 | | |

The ANOVAs revealed military rank (RANK) and formal education on combat fatigue (FEDUCCF) had a significant effect on the total score at alpha level of $p < 0.05$ (see Tables 22 and 23).

Table 23

ANOVA of Total Score by Primary Nursing Specialty (PNSPEC) and Formal Education on Combat Fatigue (FEDUCCF)

| Source of Variation | df | Mean Sq. | F. | Sig. of F. |
|---------------------|-----|----------|-------|------------|
| Main Effects | 6 | 2902.95 | 18.61 | 0.000 |
| PNSPEC | 5 | 259.03 | 1.66 | 0.145 |
| FEDUCCF | 1 | 14397.56 | 92.06 | 0.000 |
| 2-Way Interaction | 5 | 193.58 | 1.24 | 0.291 |
| Explained | 11 | 1675.24 | 10.71 | 0.000 |
| Residual | 347 | 156.40 | | |

ANOVA of Total Score by Main Source of Information

Noting that the ANOVA showed that there was a significant difference in total score based on formal education on combat fatigue, this researcher sought to identify which main source of information accounted for that difference. ANOVA of total score by the main sources of information (viz., Medical Red Flag, Battlefield Nursing Course, Inservice Education, Disaster Preparedness, and Other Source) were done. The ANOVA revealed that the Battlefield Nursing Course and Medical Red Flag had a significant ($p < 0.01$) effect on the total score (see Table 24). Independent of the Medical Red Flag, the Battlefield Nursing Course had a significant ($p < 0.01$) effect on the total score. Independent of the Battlefield Nursing Course, Medical Red Flag had a significant ($p < 0.01$) effect on the total score. There was significant ($p < 0.05$)

interaction between the Medical Red Flag group and the Battlefield Nursing Course group in regards to total score (see Table 24).

Table 24

ANOVA of Total Score by Medical Red Flag and the Battlefield Nursing Course

| Source of Variation | df | Mean Sq. | F. | Sig. of F |
|---------------------|-----|----------|-------|-----------|
| Main Effects | 2 | 4684.64 | 26.67 | 0.000 |
| Medical Red Flag | 1 | 6395.32 | 36.41 | 0.000 |
| Battlefield Nursing | 1 | 2899.59 | 16.50 | 0.000 |
| 2-Way Interaction | 1 | 761.34 | 4.33 | 0.033 |
| Explained | 3 | 3376.88 | 19.23 | 0.000 |
| Residual | 357 | 175.63 | | |

Summary

Three hundred sixty one USAF nurses (8% of the total USAF Nurse Corps population) completed and returned the "Combat Fatigue Questionnaire". Of these 361 respondents: 286 (79%) were female; the modal age was 31; 244 (68%) held bachelor degrees; 207 (58%) had more than 8 years of nursing experience; 199 (55%) were in medical-surgical areas; 200 (55%) had less than 8 years of military service; and 181 (50%) were captains.

These respondents received a total score mean of 61.9 points and the total score means differed significantly ($p < 0.01$) between nursing specialty areas. Significant ($p < 0.05$) differences also existed between nursing specialty areas on the symptom subscore means and the treatment subscore means.

Age, rank and formal education on combat fatigue had significant ($p < 0.01$) relationships to total score. Only 136 (38%) of the respondents indicated that they had formal education on combat fatigue in their military career. There was a significant ($p < 0.01$) effect on total score when the main source of education on combat fatigue was Medical Red Flag and/or the Battlefield Nursing Course.

Only 34 (9.5%) of the respondents had ever cared for a soldier with combat fatigue and 12 (3.4%) respondents had experienced combat fatigue. Three hundred twenty seven (90.8%) respondents felt that they had inadequate information on combat fatigue; 336 (93.1%) of the respondents indicated that they desired more information on combat fatigue.

CHAPTER IV

Discussion

Significant Findings

Generalizability

This was a simple random sample with a response rate of 62% and as such is generalizable to the entire population of the USAF Nurse Corps.

Level of Knowledge as Assessed by Total Score

The results of this study, as evidenced by a total score mean of 61.9, indicate that the general level of knowledge among respondents, in regards to the military casualty with combat related Acute Post Traumatic Stress Disorder (or the soldier with combat fatigue) is inadequate. If one takes the standard passing score of 70 as a measure of adequacy, then 251 (69.5%) respondents did not have a passing score. Of course it could be argued that 70% may not be a high enough score on a test which assesses knowledge with clinical applications. All respondents were instructed on their questionnaires to: "Feel free to consult any materials that you may have on combat fatigue". This researcher thinks that information that was readily accessible to the respondent should be consulted and considered a valid part of the knowledge base. The open book format of this questionnaire should have served to increase the scores as this researcher did not ask questions whose answers were not available in USAF material on the topic. Yet, despite the open book format, a knowledge deficit is still very apparent. However, the knowledge deficit is not a surprising finding given that only 136 (37.7%) received formal education about the soldier with combat fatigue. Certainly this low percentage of formally educated

respondents supports Ingraham and Manning's (1980) assertion that military medical personnel lack adequate education about combat stress.

Level of Knowledge as Assessed by Subscores

Of the four subscores, the respondents did significantly worse on two subscores than on the other two. Specifically, the level of knowledge of the respondents in regards to the symptoms (mean subscore was 12.7 out of 20) and treatment (mean subscore 14.8 out of 32) of this disorder is sorely lacking. One might ask, "Why was there a greater knowledge deficit in regards to symptoms and treatment as opposed to the disorder and prevention of combat fatigue?". This researcher speculates that more is known about the disorder and prevention of combat related PTSD because of the general increase in media information on Post Traumatic Stress Disorder in the past several years.

Adequacy of the Combat Fatigue Questionnaire

An important consideration is whether this questionnaire was too difficult or not really an adequate measure of knowledge about combat fatigue. To preclude that possibility, this researcher specifically had the USAF's expert, Colonel David R. Jones, review the questionnaire for content validation. Colonel Jones provides the content for the management of combat stress casualties for the Medical Red Flag and Battlefield Nursing Course. In addition to content validation, the questionnaire had a significant ($p < 0.05$) test-retest reliability of .65.

Finally, the raw frequencies and percentages of correct responses were calculated on all 25 level of knowledge questions. This researcher found that out of the 25 level of knowledge questions: 6 questions (24%) had a correct response rate of 80% or greater; 8 questions (32%) had a correct response rate of at least 60% but less than 80%; 7 questions (28%)

had a correct response rate of at least 40% but less than 60%; and 4 questions (16%) had a correct response rate of at least 20% but less than 40% (see Table 25).

Table 25

Raw Frequencies and Percentages of Correct Response on Level of Knowledge Questions

| % of Correct Responses | n | % | Cumulative % |
|------------------------|---|-----|--------------|
| 80% or greater | 6 | 24% | 24% |
| 60% but less than 80% | 8 | 32% | 56% |
| 40% but less than 60% | 7 | 28% | 84% |
| 20% but less than 40% | 4 | 16% | 100% |
| N = 25 | | | |

Of the six questions with the correct response rate of 80% or greater: two questions (questions 1 and 5) asked about the disorder; two questions (questions 8 and 9) asked about symptoms; and two questions (questions 23 and 25) asked about prevention (see Appendix A). Of the four questions with the correct response rate of greater than 20% but less than 40%: one question (question 11) asked about symptom activation; and three questions (questions 13, 17, and 18) asked about treatment (see Appendix A).

Between Group Differences on Scores by Nursing Specialty Area

There was a significant difference between nursing specialty groups as measured by total scores, symptom subscores and disorder subscores. The group labeled "other" (total score mean = 72.0) scored higher than the five nursing specialty areas (viz.: psychiatric, total score mean = 65.4; pediatric, total score mean = 63.5; operating

room, total score mean = 61.7; medical-surgical, total score mean = 61.4, and obstetrics-gynecology, total score mean = 59.06). One might wonder: "Why didn't the psychiatric nursing group score higher than the other nursing specialties?" The most probable answer to that question is that in the USAF, psychiatric nurses are not educated about combat fatigue separate from the other nursing specialty areas. While that may be a reason for the psychiatric nurses not knowing more about the soldier with combat fatigue than the five other nursing specialty areas, that doesn't explain why the "other" group of nurses knew more. In the next section the phenomenon of the higher scoring "other" group will be examined.

The Significant "Other"

Although a significant difference exists between nursing specialty groups as to level of knowledge scores; nursing specialty area was not one of the variables found to have a significant effect on the total scores. The variables found to have a significant effect on total scores were: age, military rank, and formal education on combat fatigue. This researcher looked at the data on the significant "other" group to determine if they were different from the total respondent population in regards to those three variables (viz., age, military rank and formal education).

The "other" group was comprised of 10 nurse administrators; 4 educational coordinators, 5 environmental health nurses, 2 outpatient clinic nurse administrators and 1 community health nurse. The "other" group had a score range from 60 to 88; the total respondent population scores ranged from 0 to 92. In the "other" group, ages ranged from 27 to 48 (mean age = 41.2 years); in the total respondent population, the age range was from 22 to 56 (mean age = 32.3 years). In the "other" group, 10 (45%) were lieutenant colonels, 7 (32%) were majors, 4 (18%)

were captains, and 2 (9%) were colonels; in the total respondent population, 181 (50%) were captains, 81 (24%) were lieutenants, 60 (17%) were majors, 33 (9%) were lieutenant colonels and 5 (1%) were colonels. In the "other" group 14 (56%) indicated that they had received formal education on combat fatigue; in the total respondent population only 38% had received formal education on combat fatigue. Thus, the "other" group was older, had attained higher military rank, and had more formal education on combat fatigue than the total respondent population which accounts for their significantly higher scores. Unfortunately, the "other" group, because of their military rank and various job descriptions, may be the least likely group to actually care for the soldier with combat fatigue.

The Experience With and Of Combat Fatigue

This respondent population were generally inexperienced in caring for the soldier with combat fatigue. Of the 361 respondents, only 34 (9.5%) had ever cared for a soldier with combat fatigue. However, 52 respondents (14.5%) served in the combat area. Of those 52, 34 (9.5%) respondents served as a nurse in combat area and 18 (5%) served in a combat area in a capacity other than a nurse. Of the 34 who served as nurses in the combat area, 3 (9%) indicated that they had experienced combat fatigue (2 of those 3 nurses had cared for a soldier with combat fatigue). Of the 18 respondents that indicated that they served in a combat area other than a nurse, 3 (17%) indicated that they had experienced combat fatigue (2 of those 3 indicated that they had cared for a soldier with combat fatigue).

An additional 6 respondents, all of whom only served as nurses in the military, indicated that they had experienced combat fatigue but had not served in combat areas. This finding is somewhat puzzling: "How

can you experience combat fatigue without being in a combat area?". On further investigation, this researcher found that 1 of these 6 had indicated flight nurse experience. Flight nurses are responsible for caring for casualties that are transported by air from the combat area to larger medical facilities in non-combat areas. Thus, during war, flight nurses care for large numbers of seriously injured soldiers. While not stationed in combat areas, these nurses fly in and out of combat areas and certainly are vulnerable to combat fatigue. It is reasonable to suspect that the 5 respondents who indicated that they had experienced combat fatigue but had not served in combat areas may have been flight nurses. Otherwise, it is possible that these respondents had experienced a Post Traumatic Stress Disorder that was not combat related.

The Desire and the Need to Know

The overwhelming majority of respondents (93%) desired more information on combat fatigue and certainly their need for more information is evidenced by their scores. The most useful sources of information on combat fatigue, as assessed by this research, are Medical Red Flag and the Battlefield Nursing Course. Both Medical Red Flag and the Battlefield Nursing Course are didactic and experiential in design. Thus, students of these courses receive content lectures about combat fatigue and then get involved in simulated field exercises where they are expected to triage and care for combat fatigue casualties. The lecture content for both courses is provided by Colonel Jones. Unfortunately, both of these learning experiences are limited in educational slots they can provide to the general USAF nurse population. To this researcher's knowledge, only one Medical Red Flag was given for nurses; the other Medical Red Flags were given for other health care professionals

(a small percentage of student slots were allocated for nurse practitioners or nurse clinical specialists, and a few nurse administrators). The Battlefield Nursing Course offers only four courses per year and has only 32 slots per course for the USAF nurse on active duty.

Nursing Implications

This researcher believes that the major finding of this study is that USAF nurses have a knowledge deficit in regards to combat fatigue. USAF nurses, as represented by this sample, are aware of that knowledge deficit and desire more information about combat fatigue. If the U.S. military gets involved again in combat, the predictions are that soldiers with combat fatigue will represent a large segment (25% or more) of all combat casualties. Only 4% of USAF nurses are psychiatric nurses. Even if these psychiatric nurses possessed an adequate knowledge on combat fatigue (and this study shows that they don't), this small number of nurses will not be able to care for the predicted large numbers of combat fatigue casualties. Therefore, all USAF nurses need to be well educated in regards to combat fatigue.

To accomplish this education the USAF needs to expand its educational programs (e.g., Medical Red Flag and the Battlefield Nursing Course) to include larger numbers of USAF nurses. Beyond expansion, the USAF could increase the number of educational avenues available to the USAF nurse to provide greater availability of formal material (i.e. videotapes, programmed instruction) on combat fatigue. In addition primary prevention efforts (i.e. development of group cohesion, esprit de corps, moral and good leadership) should receive additional emphasis throughout the USAF Nurse Corps. Because military nurses are also vulnerable to combat fatigue, primary prevention efforts will diminish the number of nurses that become impaired secondary to

combat fatigue in the next war. If war does not occur, the primary prevention efforts will at the minimum reduce the distress experienced within the work setting.

Limitations of This Research

These research findings are only generalizable to USAF nurses on active duty. Beyond that limitation, there are two others: (a) the use of a questionnaire designed by this researcher which is not yet established as an instrument with good validity and reliability; and (b) the lack of an experimental design to control for extraneous variables that might influence the respondents' level of knowledge about combat fatigue. Although this researcher sought and received content validity and test-retest reliability for the questionnaire; the possibility exists that other experts on combat fatigue will not find the content of this questionnaire valid and/or other researchers will not be able to establish a test-retest reliability on a different respondent population. Because this was a descriptive correlational research design, this researcher can only describe what is and how it relates to other existing and measured variables. Thus, this researcher can only speculate as to cause and effect and predictive hypotheses.

Suggestions for Further Research

Content validity might be further explored by other researchers by submitting the questionnaire to other experts in the field. Once content validity has been reassessed, researchers might use the "Combat Fatigue Questionnaire" to assess the level of knowledge about combat fatigue in other military nurse populations (i.e. U.S. Army, U.S. Navy and the military reserve forces). Beyond

testing other military nurses, the questionnaire could be used as a pretest-posttest to measure the efficacy of different teaching methods on the topic of combat fatigue. In addition, research might focus not only on the effectiveness of specific educational programs but also on the relationship of time to the amount of information retained (in order to calculate appropriate retraining periods). Finally, because military nurses are vulnerable to combat fatigue, research might be aimed at discovering what behaviors military nurses learn (through formal or informal channels) and implement in regards to promoting: group cohesion; effective leadership; esprit de corps; and morale.

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COMBAT FATIGUE QUESTIONNAIRE (USAF SCN 84-4)

Questionnaire Instructions:

1. Please circle the best answer.

For example: 1. The subject matter of this questionnaire is:

1. Arthritis
2. Head Trauma
- ③. Combat Fatigue

2. Feel free to consult any materials you may have on combat fatigue.
3. Please return the completed questionnaire to me within two weeks of receiving it to facilitate prompt data processing.

PART ONE

1. Combat fatigue is a condition that was formerly called:

1. battle insomnia, neurasthenia, combat exhaustion
2. shell shock, war neurosis, combat exhaustion
3. war neurosis, schizophrenia, combat exhaustion
4. shell shock, battle insomnia, neurasthenia
5. nostalgia, war neurosis, anxiety neurosis

2. The formal diagnostic label for combat fatigue is:

1. Situational Reaction to Adult Life
2. Disorder in Initiating and Maintaining Sleep
3. Acute Post Traumatic Stress Disorder
4. Acute Unresolved Grief
5. Generalized Anxiety Disorder

3. In the next war it is predicted that soldiers with combat fatigue will account for:

1. 2% of the wounded
2. 10% of the wounded
3. 15% of the wounded
4. 25% of the wounded
5. 65% of the wounded

4. Combat fatigue is the result of:

1. events that would cause stress in most people
2. characterological deficits
3. unconscious id drives that are in conflict with the superego
4. a compromised neurological system
5. 2 and 3

5. Combat fatigue is a condition that:

1. resolves over time without intervention
2. responds well to early intervention
3. has little history of ever being treated
4. has been a diagnostic entity since the Civil War
5. 2 and 4

6. The incidence of combat fatigue appears to be largely related to:

1. time in battle and intensity of the fighting
2. time in service and duty assignment
3. number of wounded and killed in action
4. 1 and 3
5. 1 and 2

7. Combat fatigue is viewed as:

1. pathological response to normal stressors
2. a mental illness
3. indicative of underlying psychopathology
4. a normal reaction to an abnormal situation
5. an idiosyncratic reaction to the combat experience

8. The symptoms of combat fatigue are:

1. emotional
2. physical
3. cognitive
4. all of the above
5. 1 and 3

9. The predominant symptom(s) seen in the soldier with combat fatigue are a result of:

1. fear
2. exhaustion
3. gastrointestinal disturbance
4. psychic numbing
5. 1 and 2

10. Symptoms of combat fatigue include:

1. palmar rash, nystagmus, motor agitation
2. palpitations, mutism, memory impairment
3. urinary retention, insomnia, tinnitus
4. hyperventilation, fever, exaggerated startle response
5. muscle tremors, increased appetite, mood disturbance

11. Symptom activation is most likely to occur in soldiers who are:

1. in their first few hours of combat or after a month of combat
2. just about ready to enter combat who lack combat experience
3. in combat for over six months
4. in combat for over a year
5. 2 and 3

12. Among soldiers with combat fatigue symptom intensity:

1. is usually extreme
2. varies from moderate to extreme
3. is usually mild
4. varies from mild to extreme
5. 1 and 4

13. In intervening with soldiers with combat fatigue you should apply the principles of:

1. proximity, activity and expediency
2. territoriality, immediacy and expediency
3. proximity, immediacy and expectancy
4. advocacy, responsibility and loyalty
5. productivity, imminency and expectancy

14. The soldier with combat fatigue should be:

1. treated in a non-hospital setting near his/her unit
2. aeromedically evacuated to a stateside hospital
3. treated in a hospital near his/her unit
4. returned to duty immediately
5. treated in a regional hospital and returned to duty in a non-combat setting

15. The return to duty rate of soldiers with combat fatigue is expected to be about:

1. 15%
2. 35%
3. 50%
4. 65%
5. 85%

16. Appropriate interventions for soldiers with combat fatigue include:

1. mild sedation (e.g., Serax or Restoril), group support, good nourishment, crisis intervention, work therapy
2. heavy sedation (e.g., Nembutal, Phenobarbital), group support, individual psychotherapy, good nourishment, recreation
3. vitamin therapy, long term psychotherapy, good nourishment, work therapy
4. major tranquilizers (e.g., Thorazine, Mellaril), crisis intervention, group support, work therapy
5. antidepressives (e.g., Elavil, Parnate), brief psychotherapy, recreation, rest, group support

17. The length of treatment of combat fatigue is approximately:

1. 3 weeks
2. 2 months
3. 4 months
4. 2-3 days
5. 6 weeks

18. The soldier with combat fatigue should be treated at:

1. the first echelon of care
2. the second eschelon of care
3. the third echelon of care
4. the fourth echelon of care
5. the fifth echelon of care

19. The soldier with combat fatigue should be treated:

1. as all other psychiatric casualties
2. as all other wounded in action
3. as a soldier who is expected to return to duty
4. as a patient needing much support and psychiatric professional intervention
5. as a patient needing some support and little psychiatric intervention

20. Of the soldier with combat fatigue that are treated and returned to duty you can expect a relapse rate of approximately:

1. 1%
2. 7%
3. 20%
4. 35%
5. 42%

21. Primary prevention of combat fatigue involves:

1. social and biological factors
2. biological and emotional factors
3. cognitive and emotional factors
4. biological and cognitive factors
5. 1 and 3

22. For the best effect primary prevention efforts should start:

1. one to six days before combat
2. six weeks before combat
3. three months before combat
4. upon military induction
5. six months before combat

23. An important primary prevention is:

1. development of group cohesion
2. vitamin B complex with C therapy
3. psychological testing
4. narcotherapy
5. 3 and 4

24. Another important primary prevention is:

1. hypnotherapy
2. provision for four hours of uninterrupted sleep daily
3. cognitive therapy
4. assessment of family background
5. 3 and 4

25. Other prevention measures include:

1. rotation in and out of combat, adequate and realistic training
2. good leadership, maintaining high morale
3. abreaction and aversion therapy
4. war games and exploration of death anxiety
5. 1 and 2

PART TWO

1. How many years have you been a registered nurse?

- | | |
|-----------------------|-------------------------|
| 1. less than 1 | 7. 10 but less than 12 |
| 2. 1 but less than 2 | 8. 12 but less than 14 |
| 3. 2 but less than 4 | 9. 14 but less than 16 |
| 4. 4 but less than 6 | 10. 16 but less than 18 |
| 5. 6 but less than 8 | 11. 18 but less than 20 |
| 6. 8 but less than 10 | 12. 20 and over |

2. What is your primary nursing specialty area:

1. Medical-Surgical
2. Pediatrics
3. Obstetrics-Gynecology
4. Psychiatry
5. Operating Room
6. Other (please explain) _____

3. In what other nursing specialty do you have over a year's experience:
(You may circle more than one)

1. Medical-Surgical
2. Pediatrics
3. Obstetrics-Gynecology
4. Psychiatry
5. Operating Room
6. Other (please explain) _____
7. Does not apply

4. What is your age? _____

5. What is your sex?

1. male
2. female

6. What is your highest completed educational level?

1. A.A. Degree
2. Hospital Diploma
3. B.A./B.S.
4. B.S.N.
5. M.A./M.S.
6. M.S.N.
7. Ph.D.

7. How many years have you been in the military?

- | | |
|-----------------------|-------------------------|
| 1. less than 1 | 7. 10 but less than 12 |
| 2. 1 but less than 2 | 8. 12 but less than 14 |
| 3. 2 but less than 4 | 9. 14 but less than 16 |
| 4. 4 but less than 6 | 10. 16 but less than 18 |
| 5. 6 but less than 8 | 11. 18 but less than 20 |
| 6. 8 but less than 10 | 12. 20 and over |

8. What is your rank?

1. 2nd Lieutenant
2. 1st Lieutenant
3. Captain
4. Major
5. Lieutenant Colonel
6. Colonel

9. Has your military service been solely in the Nurse Corps?

1. yes
2. no

10. Other than the Nurse Corp in what other capacity have you served as a military member?

1. Please explain _____
2. none

11. Have you served as a nurse in a combat area?

1. yes
2. no

12. Have you served in a combat area in a capacity other than a nurse?

1. yes (please explain) _____
2. no

13. Have you ever cared for a soldier with combat fatigue?

1. yes
2. no

14. Have you ever experienced combat fatigue?

1. yes
2. no

15. In your military career, have you ever had any formal teaching about combat fatigue?

1. yes
2. no

16. Your main source of information about combat fatigue is from:

1. Medical Red Flag
2. Inservice Education
3. Disaster Preparedness Education
4. Battlefield Nursing Course
5. No source
6. Other (please explain) _____

17. Do you feel that you have adequate information on the condition, symptoms, treatment and prevention of combat fatigue?

1. yes
2. no

18. You would like more information on combat fatigue--particularly on:
(You may circle more than one)

1. prevention
2. treatment
3. symptoms
4. characteristics
5. all of the above
6. none of the above

19. Do you feel that there is anything that you can begin to do now to minimize the number of combat fatigue casualties that may occur in the future?

1. yes
2. no

20. Would you object to taking care of a soldier with combat fatigue?

1. yes (please explain) _____
2. no

Appendix B


Dear Colleague:

As an active duty USAF nurse assigned to Yale University, I am writing a thesis on combat fatigue. The attached questionnaire was developed to assess what USAF nurses do and do not know about combat fatigue. You can help in that assessment process by completing the attached questionnaire and mailing it back to me in the enclosed addressed, stamped envelope. Completion of this questionnaire takes about 10 to 15 minutes.

Your participation in this study is completely anonymous. Whether you choose to participate or not will have no effect on your military or job status. In fact no one will know if you participate or not. However, your support in this study may help identify nurse corps educational needs and will be greatly appreciated.

Thank you very much for your cooperation and support!

Sincerely,

A handwritten signature in cursive script that reads "Karen L. Johnson".

Karen L. Johnson, Major, USAF, NC